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CESAREAN SECTION

ITS INDICATIONS AND TECHNIC BASED ON TWO HUNDRED AND FIFTY-TWO OPERATIONS

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The indications for cesarean section can be divided into two classes: (1) the absolute, in which there is no question of choice, and (2) the relative, in which a choice of methods of delivery exists, but cesarean section seems to give the best chance of safety for both mother and child.

The absolute indications are comparatively simple: (1) a contracted pelvis, with a conjugate at the brim of less than 7 cm., or with other measurements so small that delivery could be accomplished in no other way; (2) complete obstruction of the pelvic canal by a fibroid tumor, ovarian cyst or tumor of the sacrum; (3) a gigantic child, whose head will not engage in the pelvic inlet and whose anterior parietal eminence projects well beyond the symphysis.

In all these cases, safe delivery by methods other than cesarean section is out of the question. It must be remembered, however, when dealing with a fibroid tumor, that the mass will often be pulled up spontaneously above the pelvic brim, or can be pushed up, so that an apparently hopeless case will quickly be transformed into an easy and simple delivery.

The relative indications open a wide field for discussion. Chief among them are: (1) a moderately contracted pelvis, in which one or more previous labors have ended disastrously for the child; (2) arrest of the head in the upper third of the birth canal, after a satisfactory test of labor; (3) a breech presentation in an elderly primipara; (4) placenta praevia in a primipara, whether central or partial; (5) moderate hydrocephalus; (6) impacted shoulder presentation, with or without prolapse of the arm, when the child is alive and in good or fair condition, and (7) face or brow presentation, with the chin posterior, and the baby living. The operation is always indicated as an alternative to the employment of axis-traction forceps.

This is by no means a complete list. It can be considerably amplified before all the possible indications are enumerated. We are well aware that some of the indications mentioned above can be questioned. We do not wish to be understood as recommending cesarean section indiscriminately, simply because it is an easy operation. It has been abused enough on those lines. But we do contend that it is infinitely safer for both mother and child than an axis-traction forceps delivery, with the great danger of severe or irreparable injury to both mother and child. We do not believe that delivery by axis-traction forceps should ever be chosen in preference to cesarean section, if moderately good facilities for the latter can be obtained.

After a test of labor, with unsatisfactory progress, in a breech presentation in an elderly primipara, especially if the mother is past 40 years of age, or even 35, section is much the safest form of delivery for both mother and child. We do not believe that, in any case in which the head or breech is arrested in the upper birth canal, after a satisfactory test of labor, the child should be unceremoniously dragged through the canal by any forcible method. It can be done, of course, but at a risk of injury to both mother and child that renders it perilously close to malpractice. No longer can we advise craniotomy for hydrocephalus, when, by draining the spinal canal into the perirenal connective tissue, these children can be given a very fair chance of life and useful mentality. We have seen results of this that are astonishing, and would no longer consider craniotomy as a means of delivery in hydrocephalus. We do strongly indorse the stand that cesarean section be chosen in a case of obstructed labor, in preference to a means of delivery threatening permanent disability to the mother and a high rate of death or crippling for the child. The risk of cesarean section in competent hands is not nearly as great as the risk of serious or fatal sepsis after one of these complicated vaginal deliveries, and the operation does not, unless the indication for it is of a permanent nature, prejudice a normal delivery later.

The risk of cesarean section is in direct ratio to four factors: (1) the length of time the patient has been in labor; (2) the length of time the membranes have been ruptured; (3) the number and technic of the vaginal examinations made; (4) previous attempts at vaginal delivery by forceps.

In an elective case, in competent hands, before the patient has fallen in labor at all, the risk is negligible. All the foregoing factors increase the risk enormously. Whatever may be thought of rectal examinations as a routine procedure, they are desirable and should be performed in any case undergoing a test of labor, as a preliminary to a possible cesarean section later in the course of labor.

METHODS OF OPERATION

No single technic will answer for all the indications to be met in the complications encountered. The operator, equipped to give his patient the best possible service, must choose, to fit the individual case under consideration, one of at least five different technics:

1. The old classic operation, with a long incision and eventration of the uterus, before it is incised. This operation is now rarely performed justifiably. It is the easiest of all, and hence better for the first few cases of the inexperienced operator, but it should not be considered, ordinarily, except in a case requiring extraordinary exposure of the uterus and abdomen, such as central placenta praevia, where immediate control of bleeding is essential.

2. The short high incision, with emptying of the uterus in situ, and then eventration for purposes of suturing. This is the best operation for the case *known* to be clean and uncontaminated.

3. One of the various technics for extraperitoneal cesarean section, in which previous contamination has occurred but the case is not frankly infected. These operations are often called the low cervical cesarean sections. In their field, they are most useful.

4. Abdominal hysterectomy with dropped stump, the Porro operation, in cases requiring hysterectomy and known to be uninfected, such as fibroid tumor, multinodular.

5. Abdominal hysterectomy with marsupialization of the stump in the abdominal wall, and its drainage extraperitoneally; this in cases which have been neglected, in long labor, with every likelihood of infection.

In all cases in which time is not too great a factor, the appendix should be removed. We have had a number of cases in which we neglected to do this, and operation for acute appendicitis was required within a few weeks; in one case, before the patient left the hospital. We now do it routinely and have not had cause to regret it. It should be emphasized that there is no need for hurry in these operations. The practice of timing the operation, to see how few minutes or seconds it requires, is a reprehensible one and should not be countenanced.

Hemorrhage is not to be feared. We have not yet seen an alarming hemorrhage in any operation. If 2 c.c. of a sterilized preparation of ergot, each cubic centimeter equivalent to 2 grains of crude drug of normal activity and 1 c.c. of pituitrin "O" are given hypodermically, deep in the thigh or deltoid muscle, when the abdominal incision is made, by the time the uterus is incised, it contracts so quickly and firmly that the bleeding is reduced to a negligible amount. It gives no greater effect to inject these substances directly into the uterine muscle, and it is not a good plan to do so. The less the uterus is interfered with, the better.

It is undesirable to handle the uterine cavity except for the absolute minimum necessary for the extraction of the placenta and membranes. Repeated sponging to clear out blood, and, above all, the packing of the uterus and carrying the end of the packing into the vagina cannot be too strongly condemned. There is no need whatever of any artificial dilation of the cervix, whether instrumental or manual, to permit the escape of blood, even though the operation is performed before the patient is in labor. Both these practices enormously increase the risk of infection.

In all cases in which the patient is in labor or has been examined repeatedly, the vagina should be scrubbed with tincture of green soap and water, dried, and painted thoroughly with 7 per cent. tincture of iodin. Sterile gauze packing is inserted, to be removed as soon as the operation is completed, as it then seriously obstructs drainage.

Whenever time permits, the abdominal skin should be prepared as carefully as for any other operation. Many of the operations are performed as emergencies and without time for elaborate preparation. In such cases, we are in the habit of shaving the abdomen and pubes, scrubbing the abdomen for ten minutes with tincture of green soap and hot water, using gauze mops and frequently rinsing. The abdomen is then covered with gauze dripping wet with tincture of green soap, held in place by an abdominal binder. On the table, this is removed, the skin wiped off with alcohol and painted with 7 per cent. tincture of iodin and again wiped off with alcohol, and dried. As in all our sections, the skin is then covered with a sterile rubber dam, secured on the edges of the incision by clips, so that no skin surface is visible.

It is unnecessary to wash the baby's eyes at once and instil silver. As the child has not been exposed to vaginal infection, it is a foolish waste of time. The eyes can be washed at the time of the child's first bath, with boric acid solution, but the silver is unnecessary.

At the completion of the operation, when the uterus is returned to the pelvic cavity, any clots present will be found anterior to the uterus, on either side in the vesical pouch. These should always be removed by sponging before the peritoneum is closed.

When the uterus is opened, the blood and liquor amnii which gushes out is usually sterile and harmless to the peritoneal cavity. The cavity can be protected as described in the detailed technic of the various operations, but the spill can be regarded as harmless, except in the neglected case considered under the fifth class. Even though the liquor amnii is strongly colored with meconium, the spill is usually harmless and can be disregarded until time for closing the peritoneum.

As the foregoing points of technic are general and apply more or less to all the methods of operating, it seems better to include them here rather than under any particular description of technic.

DETAILS OF OPERATIONS

OLD CLASSIC OPERATION WITH LONG ABDOMINAL INCISION

Indications.—These are: (1) the inexperienced operator; (2) central placenta praevia, when rapid control of bleeding is a vital factor. By experienced operators, this operation is rarely performed.

Objections.—These arise from the facts that: (1) the long incision gives a greater risk of hernia; (2) the uterine and abdominal wounds coincide, and there is great risk of adhesions; (3) the wide exposure of the abdomen renders contamination and infection more likely.

Technic.—1. The patient's abdominal skin is prepared as for any abdominal section.

2. If she has been in labor, or recently examined, the vagina is cleansed with tincture of green soap and water, dried, painted with 7 per cent. tincture of iodin, and packed with sterile gauze. This is done on the operating table, after the patient is anesthetized.

3. Just before the abdominal incision is made, 1 c.c. of pituitrin "O" and 2 c.c. of the preparation of ergot already mentioned are injected deep into the thigh or deltoid. The pituitrin "O" is given first.

4. The abdominal incision is made, from about 3 inches (7.5 cm.) above the umbilicus nearly to the symphysis, going around the umbilicus to the patient's right.

5. The rubber dam is spread over the abdomen, incised to correspond to the incision, and the edges are secured into the incision with clips.

6. The uterus is delivered through the incision.

7. Large gauze sponges are packed around the uterus to protect the abdomen from contamination.

8. The uterus is incised in the middle line, by an incision estimated as just large enough to permit the child's head to

pass. In about one third of the cases, this incision opens the placental site, which is of no moment at all.

9. The membranes are ruptured, the child grasped by one leg and quickly extracted. It is held upside down to allow the liquor amnii to drain from the mouth and air passages, while the cord is clamped in two places and cut between. It is then handed to an assistant to be revived.

10. The placenta and membranes are gently extracted, gauze being used to hold the membranes if they show any tendency to tear.

11. If the membranes are completely extracted, no sponging or manipulation of the uterine cavity should be done, nor should any attempt be made to dilate the cervix.

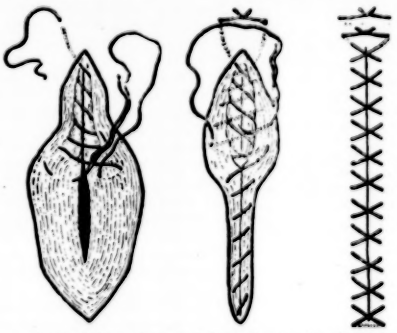
12. The uterine muscle is closed by a continuous tier stitch of No. 2 chromic catgut, the full length of the strand, threaded on a curved needle with a round point. The deeper half of the muscle is first closed, the endometrium being avoided; and then the upper half. The stitch must be kept taut throughout. When the last stitch has been taken, the catgut is tied above the wound, so that there is no knot in the wound. It is not necessary or advisable to use interrupted stitches for support, whether of catgut or permanent suture material. A glance at the illustration will make this stitch clear.

13. The peritoneal coat of the uterus is closed by a continuous stitch of No. 2 catgut, threaded on a straight needle with a round point. This stitch is in two layers, first made the length of the wound and then back again to the starting point, going *between* the previous stitches. The knot is again above the wound, and the effect of the completed stitch is that of a laced shoe, as the illustration shows plainly.

14. All soiled sponges are removed, the uterus is returned to the abdominal cavity, and any blood which may be present is sponged out. This will be found anterior to the uterus, in the vesical pouch.

15. At this time, the appendix is removed.

16. The abdomen is closed by the ordinary layer method, as in any section. If the subcuticular stitch is used, it should be of catgut, owing to the length of the wound.



Closure of the uterine wound, illustrating the tier stich of the uterine muscle and the peritoneal stitch. The material is No. 2 catgut of forty-day durability. (From J. C. Hirst: Manual of Obstetrics.)

SHORT HIGH INCISION, WITH EVACUATION OF THE UTERUS AFTER EMPTYING

Indications.—This is the operation to be chosen in the case in which operation is performed before labor, or in a case known to be clean and free from contamination.

Advantages.—These are: (1) a short abdominal incision, hence less risk of hernia; (2) no coincidence between uterine and abdominal wounds, hence a minimum risk of adhesions; (3) a stronger abdominal wall than in other technics.

Disadvantages.—There are no disadvantages unless there is contamination. Then, because of the slight unavoidable spill into the abdominal cavity, there will be some risk of peritonitis.

Technic.—1. The patient is prepared as for any abdominal section. If she is not in labor, vaginal preparation is unnecessary. It is *not necessary* to secure any preliminary dilatation of the cervix, to permit escape of blood during and after operation. This takes care of itself.

2. Pituitary extract and ergot are given as described.

3. A short incision, just long enough to allow the extraction of the head, is made, one third above and two thirds below the umbilicus, going to the patient's right of the umbilicus.

4. A rubber dam is applied as described.

5. An assistant places his hands around the wound and pushes the uterus from the patient's right to her left. This is partly to guard the peritoneal cavity from unnecessary spill, but chiefly to correct the normal lateral torsion of the uterus and make possible the uterine incision in the middle line and away from the broad ligament, where the uterine wall is much more vascular.

6. The uterine incision is made, just large enough to enable the child to be extracted. The child is grasped by one leg and gently delivered.

7. Just as the child's head is delivered, the first assistant hooks his finger in the upper angle of the *uterine* wound and pulls the uterus out through the abdominal incision.

8. Gauze pads are then packed in front of, behind and all around the delivered, contracted uterus.

9. The placenta and membranes are extracted as described.

10. From this point, the further steps of the operation are precisely as described in the first technic. The uterus is closed in exactly the same way. When it comes to returning it to the abdomen, it must be sharply rotated to the right, so that the left tube is in the middle line, to go through the small abdominal incision.

11. The abdomen is closed as in any section.

EXTRAPERITONEAL OPERATION

Indications.—This mode of operation is indicated and can be carried out with a maximum of safety in dealing with the patient in labor for some time, with ruptured membranes, especially when ineffectual attempts at delivery have been made, but the patient is not frankly infected.

Objections.—(1) The patient should be in labor, with the lower uterine segment thinned out. When the operation is done as an elective one, it is considerably more difficult. (2) Placenta praevia often entails a very severe and alarming hemorrhage, in this type of operation. (3) The operation is technically the most difficult of all, though this is a matter of slight moment to the experienced operator.

Technic.—Of the many technics devised, we prefer the one described herewith, essentially that of Beck.

1. The abdomen and vagina are prepared as already described.

2. The patient should not be catheterized unless the bladder is very full. A moderate distention of the bladder makes the operation easier.

3. The abdomen is incised in the midline, from umbilicus to pubis, and the rubber dam applied as described.

4. The abdominal walls are held up by retractors and a cofferdam of gauze is built, from side to side, between the abdominal and the anterior uterine walls.

5. The vesical reduplication of the peritoneum is grasped in two forceps, just above the bladder, and split *transversely* from one broad ligament to the other.

6. The upper flap is dissected up as far as possible, and the lower (bladder) half as low as possible, and this lower half held back by a hand retractor.

7. The exposed anterior lower uterine segment is incised in the middle line, as far as exposed. Dr. J. B. DeLee has devised a sickle-shaped knife which is most useful for this purpose.

8. The operator's hand rotates the child's face into the wound.

9. Light obstetric forceps are applied to the sides of the child's head, and it is delivered through the uterine and abdominal wounds. Forceps must be used, because there is no room for the hands.

10. The body is then easily extracted.
11. The cord is clamped in two places and cut, and the child is given to an assistant to revive.
12. The placenta and membranes are then extracted.
13. A stitch of No. 2 chromic catgut is placed at the upper limit of the uterine wound and another at the lower limit. When these are pulled on, the whole length of the uterine wound is lifted up for easy suturing.
14. Several interrupted stitches are placed in the muscle, and left untied, for the time being.
15. The edges of the cut muscle are joined by a single layer of No. 2 chromic catgut.
16. The interrupted stitches are then tied.
17. The upper flap of peritoneum is tacked down over the exposed muscle; then the lower flap with the bladder is sewed, by a continuous stitch, above the cut edges of the upper flap. This completely covers the lower uterine segment and incision.
18. The gauze is removed, and the abdomen closed in layers as usual. In this operation, the cervical canal, theoretically, at least, contaminated, is opened. There may be some doubt of the propriety of invading the upper abdomen, so carefully protected from contamination, to remove the appendix. We have never found any objection to it; we do it routinely, after a change of gloves, but recognize the justice of the objection.

PORRO OPERATION WITH A DROPPED STUMP

Indications.—This mode of operation is indicated in any clean case complicated by fibroid tumor or other condition which makes removal of the uterus necessary.

Technic.—As considerable exposure is necessary, the first technic, with long incision, is followed, up to the point where the child is delivered and the cord clamped and cut. Then, no attempt is made to deliver the placenta, but the cord and remaining hemostat is tucked back in the uterine cavity, which is then clamped together by several volsella, securely enough to prevent leakage. Then, the uterus is removed by clamping and cutting the broad ligaments, uterine arteries and cervix. The cervical stump, because of its great vascularity, must be very carefully sewed together, to prevent oozing and formation of a hematoma, and it is carefully peritonealized by its anterior and posterior flaps. The stump is then dropped back and the appendix removed. The abdomen is closed as in any ordinary section.

No attempt should be made to drop the stump in the peritoneal cavity, unless one is positive that there is no infecion. This is not the type of operation for a case which has been neglected or badly handled, or is infected.

PORRO OPERATION WITH MARSUPIALIZATION AND DRAINAGE OF THE CERVICAL STUMP

Indications.—These are: (1) ruptured uterus; (2) cases in which the patient has been long in labor, with many ineffectual attempts at delivery, with probable infection; (3) cases in which the patient is knowa to be infected. Unless the uterus is removed and the cervical stump drained in the cases listed, the mortality of the operation from peritonitis will be appallingly high.

Technic.—Except for extra care in packing off the peritoneal cavity from contamination, the steps of the operation are exactly those of the Porro operation just described, until the cervical stump is closed. This should be just as carefully peritonealized as if it were going to be dropped, but instead it is sewed outside of the peritoneal cavity, in the lower angle of the wound, its end resting on the stump and the wound then closed around it, leaving a pouch for drainage. The short length of tube required is then sewed to the skin, as otherwise the pouch is too shallow to hold it. By employing one of the technics described, depending on the indications in each case, the operator is equipped to cope with any emergency he is likely to meet.

ROUTINE AFTER-TREATMENT

The routine after-treatment does not differ materially from that of any ordinary section, except in certain particulars, to be mentioned, but must be combined with the ordinary obstetric care of the breasts and nursing.

It is essential that proper drainage of the birth canal be secured. As the vagina, with the patient recumbent, drains uphill, the head of the bed should be raised on blocks 12 inches. This is particularly important in primiparas; and further, to make sure there is no retention of lochia in the upper one third of the vagina, a vaginal douche of sterile water, once daily, is needed. Improper uterine drainage is a common cause of fever in the convalescence of these cases.

It is very common for tympanites to develop. That associated with a slow pulse need give no concern, although the distention may be alarming in appearance. It is advisable routinely to give 0.5 c.c. of pituitrin "O" hypodermically, twice daily, with a hypodermic of one-fortieth grain of physostigmin (eserin) sulphate and one-fortieth grain of strychnin sulphate, four times a day. This does more to control the distention than any combination we have tried. In addition, high compound enemas will aid materially in expelling the gas. Should the distention be confined to the epigastrium, and appear to be acute dilatation of the stomach only, gastric lavage with a 3 per cent. sodium bicarbonate solution is the quickest and surest relief. It may be necessary to repeat it several times in twenty-four hours.

We have not yet seen serious postpartum hemorrhage after any operation. Should the amount of bleeding seem excessive, a repetition of doses of 1 or 2 c.c. of the preparation of ergot hypodermically has always been ample to control it. We should not hesitate, however, to pack a uterus sewed up as described, should it seem necessary to control the bleeding.

At times, these patients will develop moderate sapremia and purulent lochia, with some rise of temperature. We have felt no hesitancy in irrigating the uterine cavity in such cases, using a Bozemann intrauterine douche nozzle, of large caliber, and a very slight head, not more than a foot, to the flow. The solution is 7 per cent. tincture of iodin, one-half (15 c.c.) ounce; 95 per cent. alcohol, 8 ounces (240 c.c.) and water to make 4 pints (1,920 c.c.). Once daily is often enough. Nothing is gained by too frequent douching.

The child is given water as needed for the first twenty-four hours, then condensed milk, 1 dram (3.9 c.c.); boiled water, 12 drams (47 c.c.), every three hours for the next twenty-four hours; and is put to the breast for regular nursing, just as in a normal delivery, after the milk appears.

COMMENT

Cesarean section can apparently be performed repeatedly. There is a case on record in which there were ten operations. One of us (J. C. H.) has performed the fifth cesarean section on a patient (he did not do all five, however), and has perferomed three on one patient in the space of four years.

Sterilization of the mother after cesarean section is a matter for considerable divergence of opinion. We do not believe in it, even though the mother has several children. She might lose them all, or most of them, and then bitterly regret her inability to have others. A procedure seeming desirable at one time may easily seem very different at a later date. Should it be decided on, written consent of both husband and wife should be obtained, and filed with the patient's history, and in the absence of this consent, nothing should be done. It is best performed by excising the tube at the cornu, resecting about an inch and burying the stump in the layer of broad ligament.

Rupture of the wound in subsequent pregnancy or labor is a comparatively rare occurrence. Statistics in this country give about 3 per cent. as the frequency; abroad, figures run from 4 to 5 per cent. We do not subscribe to the dictum "once a cesarean, always a cesarean," unless the reason for the operation is a permanent indication such as a badly contracted pelvis.

We believe that the danger of rupture in a uterus properly closed is much less than the foregoing figures would indicate. It is more common in cases with a febrile convalescence, naturally. We know of two cases in this series; one in which the uterus ruptured in the last month of a subsequent pregnancy. The second case cannot be charged to any fault in the operation. A patient with a rachitic pelvis of only 7 cm. was delivered by cesarean section, with a smooth, afebrile convalescence. She was warned that, in any subsequent pregnancy, she should not fall into labor, as the obstacle was insuperable, but should undergo a cesarean section. She informed her physician of this fact, but he disregarded the warning, allowed her to go two weeks beyond term, and to fall into labor. After twelve hours of active labor, during which no attempt was made to aid her in any way, the uterus ruptured. We have heard of no others. Rupture of the scar is much less likely in the low extraperitoneal operation; another argument in favor of it to offset the extra difficulty in technic. We have had many patients who passed through a normal labor without trouble after a cesarean section done for a transient indication. We believe, therefore, that it is safe to allow a patient to fall into labor and attempt to deliver herself, provided her pelvic measurements and the fetal measurements justify the attempt.

RESULTS OF OPERATIONS ON WHICH THIS PAPER IS BASED

Our experience to the present totals 252 operations. The cases were unselected, and the patients were operated on just as they presented themselves. They vary in desirability from the ideal clean case, in which operation was performed before labor, under ideal conditions and surroundings, to those in which operation was performed in unfavorable surroundings, in various stages of neglect, and one particularly in which a patient with a rachitic funnel shaped pelvis had been in labor five days, with four physicians making a total of thirteen attempts at forceps delivery and one attempt at version. (This patient recovered after hysterectomy and drainage of the stump; the child is alive and well). In this series of 252 cases, there have been five maternal deaths. One from hemorrhage from a ruptured varicose vein in the broad ligament, eight hours after operation (proved by postmortem examination); one from mesenteric embolism of the transverse colon; three from septic peritonitis. Of these latter, two occurred before the days of extraperitoneal cesarean section. Had this technic been used, we are confident one or both might have been saved. This maternal mortality gives a percentage slightly less than 2. The fetal mortality, in any series of unselected cases, will run relatively high. In neglected cases, the child is so often injured by prolonged pressure or ill advised attempts at instrumental delivery that it is either stillborn or dies shortly after delivery. This can be in no way ascribed to the operation. Even in clean cases, the child is not entirely safe. It is born anesthetized in many cases, and inspiration pneumonia will later claim some of these infants though the risk is naturally many times less than in any other form of delivery in these particular cases. It is a mistake, however, to say that in a clean ideal case of cesarean section, the child runs no risk. It does, though a small one in comparison.

In this series, eighteen children were stillborn or died shortly after delivery; some of these deaths might have been avoided had the patient been brought to operation without needless delay. Two died of enlarged thymus, which would have occurred in any method of delivery.

It is vitally necessary, however, for the operator to provide a competent assistant to receive the baby and attend to its resuscitation, if needed, rather than trust this important duty to any one who happens to be present. It is a great mistake to keep on working with the child after it has begun to breathe regularly, and try to make it cry. After regular breathing has been established, the child should be well covered and left strictly alone.

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THE FAMILY ASSOCIATION OF CARDIAC DISEASE, ACUTE RHEUMATIC FEVER, AND CHOREA

A STUDY OF ONE HUNDRED FAMILIES *

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The frequency with which cardiac disease is observed in two or more members of the same family is impressive, and investigation soon leads to the belief that this family association is far greater than may be accounted for by the laws of chance. Textbooks make note of a family predisposition to acute rheumatic fever, although little is said concerning disease of the heart or chorea (Sydenham's). The literature of the last ten years reveals little recent work on the subject. Although of great importance, the question as to whether cardiac disease is communicable and the means by which it is disseminated have excited little interest.

In the recent war it was demonstrated that syphilis is rarely an etiologic factor in cardiac disease in persons under 35 years of age;[1] and so few cases are observed to arise as a result of such infectious diseases as scarlatina, pneumonia and influenza that they are of little importance. The arteriosclerotic and degenerative diseases of the heart which cause such high death rates in the older ages are unusual in childhood and early adult life. Disease of the heart in children and young adults is commonly a sequel of the rheumatic manifestations, for between 80 and 90 per cent. of the cases are closely associated with acute rheumatic fever, chorea, myositis, bone or joint pains (growing pains) or recurrent attacks of sore throat.[2] This frequent association and apparent causal relationship has given rise to the belief that these conditions are different clinical expressions of the same disease. The

* Read before the New York Academy of Medicine, Oct. 19, 1922.
From the Department of Diseases of Children, Columbia University College of Physicians and Surgeons, and the Children's Cardiac Clinic, St. Luke's Hospital.

1. Conner, L. A.: Cardiac Diagnosis in the Light of Experiences with Army Physical Examinations, Am. J. M. Sc. **158**: 773 (Dec.) 1919.
2. St. Lawrence, William: Potential Cardiac Disease and the Prevention of Heart Disease in Children, J. A. M. A. **78**: 947 (April 1) 1922.

cardiac problem in persons under 40 years of age is therefore virtually that of the so-called "rheumatic infections." It appears at once that it is the "rheumatic infection" rather than the complicating cardiac disease that is of importance from the standpoint of public health and prophylaxis. If, then, it is admitted as a premise, not yet satisfactorily proved, however, that cardiac disease in the young is of bacterial origin and a clinical expression or complication of "rheumatic infection," it is of the utmost importance that the means by which such rheumatic disease is disseminated should be investigated. Only then will it be possible intelligently to formulate plans for the prevention of a disease which as yet is little influenced by the known measures of management. Since it has been realized that tuberculosis is a communicable disease which is transmitted chiefly by close contact between the diseased and exposed susceptibles, great advance in its eradication has been made until at present it ranks, in New York City, below cardiac disease as a cause of death.[3] It is a matter of common knowledge that this decline in the death rate began before the causative organism was discovered.

TABLE 1.—AGE DISTRIBUTION IN ONE HUNDRED FAMILIES

Years of age	Number of Persons
From 1 to 5	28
From 6 to 10	109
From 11 to 15	162
From 16 to 20	91
From 21 to 30	23
From 31 to 40	74
From 41 to 50	87
From 51 to 60	6
Total	580

This study was planned for the purpose of determining the frequency of acute rheumatic fever, chorea and cardiac disease in families known to have one young member the subject of organic disease of the heart. The other members of these families presented a group of individuals bearing an intimate relation, in terms of close family living, with cardiac disease, and very frequently with acute rheumatic fever and chorea. As it seemed reasonable to consider an individual who suffered from any of these conditions as the subject of "rheumatic infection," it was felt that the frequency with which these were found in other members of the family would indicate either the degree to which a susceptibility had been transmitted or the extent to which the infection had been disseminated among those in close contact with the disease.

This series consists of 100 families. Each family had at least one child (from 5 to 15 years of age) enrolled in the Children's Cardiac Clinic of St. Luke's Hospital. They were selected alphabetically as the case histories appeared in the files, and the first 100 completed were chosen for the study. The parents were questioned carefully as to the previous occurrence of acute rheumatic fever and chorea in themselves and in each of their children. Acute, self-limited joint disturbances in which the joints returned apparently to normal after the attack had subsided were not counted as cases of acute rheumatic fever unless the attack had been sufficiently severe to require bed care. All subacute and chronic ailments of the joints were eliminated. Chorea was assumed certainly to have occurred only when the diagnosis had been made by a physician. As most of the families resided in the neighborhood of the hospital and had been under its care for many years, the hospital case records frequently gave valuable information in doubtful cases. Members dead of heart disease were counted as such only in those cases in which the history seemed to be beyond doubt. Myositis, bone and joint pains (growing pains) and recurrent attacks of sore throat were not included in the series, because it was deemed wise to deal only with precise clinical entities susceptible of little misinterpretation. The diagnosis of cardiac disease was made only in those cases in which there were definite physical signs of organic disease. Cases presenting functional disturbances and cases showing questionable signs of disease, such as borderline enlargement, were not included. The cases accepted were definitely or apparently of rheumatic origin, and included lesions of the endocardium, pericardium and myocardium. Persons with syphilitic, sclerotic and degenerative lesions were eliminated.

The 100 families included 626 individuals (parents and children). Sixty-three families were studied completely. In the remaining thirty-seven it was not possible to examine every member because of death, absence from home, or poor cooperation. However, only forty-six persons remained unexamined, so that the number studied was 580. Deducting from this number the 100 children who formed the nucleus for selection, there remained a group of 480 persons known to have been exposed to long contact with persons suffering from cardiac disease, and very frequently to those with acute rheumatic fever and chorea. Throughout this paper these people will be referred to as exposed persons. About 40 per cent. of these were adults; the remaining 60 per cent. consisted of children and adolescents. The age distribution is given in Table 1.

The families varied in size from three to eleven persons, and the average size was six. American, English, Irish, Scotch, French, Italian, Scandinavian, Slavic, Jewish and German stock was represented.

TABLE 2.—INCIDENCE OF RHEUMATIC INFECTION IN ONE HUNDRED FAMILIES (FIVE HUNDRED AND EIGHTY PERSONS)

Number of Members of Same Family Affected with Rheumatic Infection, Cardiac Disease, Acute Rheumatic Fever or Chorea	Number of Families	Per Cent.
2	33	33
3	14	14
4	2	2
5	1	1
2 or more	50	50
Number of cases found in exposed persons	71 of 480	14.8

INCIDENCE OF "RHEUMATIC INFECTION" (ACUTE RHEUMATIC FEVER, CHOREA OR CARDIAC DISEASE)

It seemed logical to consider a person who suffered from acute rheumatic fever, chorea or cardiac disease as the subject of rheumatic infection. Table 2 is based on this assumption. In this table are listed as cases of rheumatic disease those persons who were suffering or had suffered from any one or more of these conditions.

Two or more persons in the same family were found to be the subjects of rheumatic infection in fifty families—one half of the number studied. Included, of course, were the children who formed the basis for selection. Two affected members were found in thirty-

3. Emerson, Haven: The Prevention of Heart Disease—A New Practical Problem, Boston M. & S. J. 184: 590 (June 9) 1921.

three families (33 per cent.); three such persons in fourteen families (14 per cent.); four members were infected in each of two families (2 per cent.), and one family contained five persons who had been affected (1 per cent.). Of the 480 exposed persons, seventy-one, or 14.8 per cent., presented evidence of rheumatic infection. It would seem that, having determined the presence of a rheumatic manifestation in one member of a family, there is one chance in two that on examination at least one other member will be found to have been affected by a condition of similar nature.

TABLE 3.—INCIDENCE OF CARDIAC DISEASE IN ONE HUNDRED FAMILIES (FIVE HUNDRED AND EIGHTY PERSONS)*

	Number	Per Cent.
In 2 or more members	29	29
In 2 members	22	22
In 3 members	5	5
In 4 members	2	2

* Of the 480 exposed persons, thirty-eight, or 8 per cent., showed cardiac disease.

INCIDENCE OF CARDIAC DISEASE

Two or more members were found to be the subjects of organic disease of the heart in 29 per cent. of the families. There were two members affected in twenty-two families; three members in five families, and in each of two families there were four members similarly affected. Among the 480 exposed persons, thirty-eight were found to suffer from disease of the heart. These equaled 8 per cent. and far exceeded the incidence quoted for the general population, which is usually estimated at between 1 and 2 per cent. Of the thirty-eight cases found among the exposed persons, twenty-seven did not know that they had heart disease until examined for this study. In other words, 70 per cent. of those affected were not conscious of their condition. When disease of the heart is found in one member of a family, there is almost one chance in three that on examination of all members, at least one other member will be found to be afflicted.

In a small percentage of cases of heart disease in children (about 10 per cent.), painstaking investigation will reveal no history of acute rheumatic fever, chorea, myositis, bone or joint pains, or recurrent attacks of sore throat. It was interesting to find that other members of families of these children frequently showed a high incidence of what we have described as the rheumatic manifestations. This observation gave weight to the belief that these cases of heart involvement were also of rheumatic origin, and it would appear that the exciting cause of heart disease may affect the heart without giving any other clinical expression of rheumatic infection. In a few families, several members presented definite evidence of a lesion in the heart, yet in these families not a single member had suffered from any other rheumatic manifestation. Apparently transmission, if it occurs, may occur without the throat disturbances so commonly encountered.[4] Cases diagnosed, probably in error, as congenital disease of the heart, are frequently accompanied by a high incidence of cardiac disease and the other rheumatic manifestations in other members of the family. Occasionally, cases of congenital heart disease have been observed in which the mother had acute rheumatic fever during the period of that child's gestation.

4. Branson, W. P. S.: The Avenues of Rheumatic Infection, Brit. M. J. 2: 1429 (Nov. 23) 1912.

Acute rheumatic fever had occurred in two or more members in twenty-four families (24 per cent.), and as many as five members of one family had suffered one or more attacks of this manifestation. Two of these five persons had suffered from the disease at the same time. The family distribution is given in Table 4. Forty-nine, or 10 per cent., of the 480 exposed persons had suffered from this condition. This would seem to exceed by far the incidence of acute rheumatic fever in the general population, for while the exact figures are unknown, general clinical experience in the hospitals of New York would not lead one to believe that one person in ten suffered from this manifestation at some time during life. In many instances it was found that parents had been affected with acute rheumatic fever some years before attacks appeared in their children, although few facts could be established concerning its appearance in three succeeding generations. In two or three instances, grandparents were known to have had the disease which later appeared in the uncles, aunts and parents of the children of this series, these children themselves succumbing at a still later date. No conclusions could be reached as to whether a susceptibility had been transmitted or the exciting cause had been transferred from generation to generation. Those parents who had suffered from this manifestation quite commonly escaped it in childhood and adolescence and suffered from the first attack in adult life. In view of the high rate (88 per cent.) of heart involvement in acute rheumatic fever in childhood, and since many children who contract heart disease do not reach adult life, this may mean that had these parents suffered infection in childhood or adolescence, they would have long since been dead of heart disease.[5]

Myositis and bone and joint pains (growing pains) were exceedingly common in the children of this series: far more common, it was thought, than would appear in the general population. It would seem that bone and joint pains and sore throats in children known to live in infected families should be treated

TABLE 4.—INCIDENCE OF ACUTE RHEUMATIC FEVER IN ONE HUNDRED FAMILIES (FIVE HUNDRED AND EIGHTY PERSONS)*

	Families	
	Number	Per Cent.
In 2 or more members	24	24
In 2 members	17	17
In 3 members	6	6
In 4 members	0	0
In 5 members	1	1

* In 480 exposed persons there were forty-nine cases of acute rheumatic fever, or 10 per cent.

with the utmost care, for this combination is present to the exclusion of acute rheumatic fever and chorea in the histories of 9 per cent. of cardiac children.[2] Similarly, subacute and chronic arthritis seemed unusually frequent, although they were not included in the presumably rheumatic infections.

Of the twenty-nine adults who had acute rheumatic fever, thirteen, or 45 per cent., showed cardiac involvement. This was a much lower rate than existed in the seventy-two children who had suffered from this manifestation, among whom there were sixty-three cases, or 88 per cent.

5. Dunn, C. H.: Pediatrics, Troy, N. Y., the Southworth Company, 1917, p. 43.

CHOREA

Chorea was present in two members in each of three families and in eight of the 480 exposed persons. It was present in twenty-four of the 100 children with heart disease. Aside from the fact that chorea was exceedingly infrequent among the parents of these children, no enlightening information was obtained.

A COMPARISON OF THE FAMILY INCIDENCE OF THE "RHEUMATIC INFECTIONS" AND TUBERCULOSIS

As an unexpectedly high incidence of rheumatic infection and cardiac involvement in families in which one young member was known to have organic disease of the heart was discovered, the question arose as to what would be shown by a similar study of a disease known to be communicable. Tuberculosis was chosen for comparison. In this disease the causative organism has been determined, and the knowledge of transmission has been based on scientific facts, whereas in the case of rheumatic infection, the assumption rests on clinical evidence alone. While the evidence is strong that acute rheumatic fever, chorea and cardiac disease result from infections, the causative organisms have never been determined and the belief that they are the same in origin is merely a presumption. Nevertheless, it was hoped that the comparison proposed might be productive of interesting facts. We have learned much concerning the method of transmission and the degree of communicability of such diseases as measles and scarlatina, although their causative organisms have remained obscure.

TABLE 5.—COMPARISON OF THE FAMILY INCIDENCE OF "RHEUMATIC INFECTION" AND TUBERCULOSIS IN TWO HUNDRED FAMILIES*

Number of Affected Members in Same Family	"Rheumatic Infection" (Cardiac Disease, Acute Rheumatic Fever or Chorea)	Tuberculosis
2	33 families	33 families
3	14 families	9 families
4	2 families	3 families
5	1 family	3 families
2 or more	50 families	48 families
Number of cases found in exposed persons	71 of 480	72 of 492
Percentage of cases found of exposed persons	14.8	14.6

* One group comprised 100 families, each with at least one member who was the subject of rheumatic infection; the other comprised 100 families with at least one member who suffered from active tuberculosis. The families subject to rheumatic infection comprised 580 persons. The families exposed to tuberculosis included 592 persons. Deducting the 100 members who formed the nucleus for selection in each instance, there remained 480 persons exposed to rheumatic infection, and 492 persons exposed to tuberculosis. By "rheumatic infection" is understood either acute rheumatic fever, chorea or cardiac disease, presumably of rheumatic origin; for, as explained in the text, a person presenting any one of these conditions was considered to be the subject of rheumatic disease. It will be seen that in families having one member the subject of the disease, rheumatic infection exceeds tuberculosis in family incidence and in frequency among exposed persons.

A study by Miss Billings, described by Hawes,[6] gives the results of the examination of 959 persons known to have been exposed to tuberculosis by the presence of an active case in the family. This report states that on the examination of 597 exposed adults, seventy-five, or 12.5 per cent., were found to have positive cases of "consumption," presumably meaning cases of pulmonary tuberculosis. The examination of 362 exposed children revealed thirty-eight, or 10.5 per cent., to be positive cases. Whether the latter included all clinical types of tuberculosis or referred to disease of the lungs alone was not stated. The average for adults and children equaled 113 cases of the disease, or 11.7 per cent. of the exposed 959 persons.

An analysis of 100 families each known to have one member the subject of active tuberculosis was prepared by Miss Grace Cooke of the Tuberculosis Department of St. Luke's Hospital, New York, for the purpose of comparison with this series of 100 cardiac families. The families of Miss Cooke's series came from the same neighborhood as the cardiac families, where they lived at the same time and under the same social conditions. They therefore make excellent material for comparison. They were selected by taking the most recent 100 families enrolled in the tuberculosis clinic, to which they were admitted because of the known presence of active tuberculosis in at least one member. This series comprised 592 persons, which included the 100 patients who formed the nucleus for selection, and 492 exposed individuals (adults and children). Counting all types of tuberculosis (lungs, glands, bones, meninges, eyes, etc.), seventy-two of the 492 exposed persons were found to have contracted the disease. This number equaled 14.6 per cent. Forty-eight of the 100 families presented two or more members who had contracted the disease. It will be seen, therefore, that in families having one member the subject of the disease, rheumatic infection exceeds tuberculosis in family incidence and in frequency among exposed persons. A detailed comparison of these two groups of families is given in Table 5.

With these figures in mind, it is deemed wise to present the views of those familiar with tuberculosis on the subject of the family in its relation to the spread of this disease. Hawes[6] states that "it is now a generally accepted fact that a very large amount of tuberculous infection occurs in childhood in the intimate contact of family life." MacCorison and Burns,[7] referring to tuberculosis, say: "The swiftest channels for the spread of the disease and for the furtherance of its activity are through family lines," and they designate family groups of infected people as "family clusters." Newsholme[8] states that "it is sufficiently clear that young children are particularly prone to be infected, partly because they are more caressed and possibly also because they are more susceptible than their elders," and that "tuberculosis is undoubtedly caused most often by domestic infection." He quotes Koch as saying that "tuberculosis has been frankly and justly called a dwelling disease."[9]

After comparison with tuberculosis, the incidence of rheumatic infection and cardiac disease in infected families seems striking indeed. It would appear that, as far as the incidence of family infection is concerned, the problems do not differ greatly. With the weight of opinion in favor of the family group as a most important means of disseminating tuberculosis, the question arises whether a less serious attitude may safely be adopted toward disease of the heart. While these results are only suggestive, they lead, nevertheless, to a desire for further information, for it is difficult to evade the proposition that rheumatic disease, and therefore cardiac disease, is communicable to a degree not generally imagined, and that close

6. Hawes, J. B., 2d: The Problem of Infection in Tuberculous Families, Tr. Nat. Assn. for Study and Prevention of Tuberculosis, 1914, p. 264.

7. MacCorison, C. C., and Burns, N. B.: The Rôle of "Family Clusters" in the Prevalence of Pulmonary Tuberculosis, Boston M. & S. J. **169**: 224, 1913.

8. Newsholme, Arthur: The Prevention of Tuberculosis, London, Methuen & Co., p. 149.

9. Newsholme, Arthur: The Prevention of Tuberculosis, p. 146.

contact over long periods of time between the diseased and exposed susceptibles is an important means of transmission. May not the intimate living in the "family cluster" prove as important in relation to cardiac disease as it has been found to exist in tuberculosis? The causes underlying this great frequency in families are difficult to determine, and from the facts at present available no conclusions can be reached as to the relative importance of inherited susceptibility and dissemination by close contact between infected and noninfected persons. If the latter should prove to be the case, the exact manner of dissemination will almost certainly provide an important subject for future investigation. The frequency of sore throats in persons who suffer from the rheumatic infections, and the marked effect of tonsillectomy on the recurrence of these conditions, naturally call to mind the possibility of the spread of the disease by throat to throat infection during the active stages.[10]

It is well known that conclusions cannot be drawn from so small a series. Nevertheless, from the findings presented, it would seem imperative that physicians, on discovery of rheumatic infection or cardiac disease in one member of a family, should strongly recommend the examination of all other members of that family for evidence of these conditions. The rheumatic manifestations must be taken seriously, for persons subject to recurrences are potential cardiac cases and candidates for heart involvement at any time. Should these findings be confirmed, the "family group" will assume increased significance in the dissemination of rheumatic infection, and therefore of cardiac disease, and offer an important place for the intensive application of such preventive measures as are available.

950 Park Avenue.

CARBON TETRACHLORID IN THE TREATMENT OF HOOKWORM DISEASE

OBSERVATIONS IN TWENTY THOUSAND CASES *

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The value of carbon tetrachlorid in the treatment of hookworm disease in dogs was first noted by Hall.[1] He found that 0.3 c.c. of the drug for every kilogram of body weight sufficed to expel all the hookworms without subsequent purgation—a result that he had not been able to achieve with any other anthelmintic. Tests of the drug made in combination with thymol and with chenopodium produced equally favorable results. Monkeys, swine and horses were also treated, and postmortem examinations performed on these animals, months later, revealed no pathologic changes in the organs which could be attributed to carbon tetrachlorid. Dr. Hall himself took 3 c.c. of the drug without ill effect.

In view of the interesting results obtained by Hall, the Bureau of Ankylostomiasis of the Medical Department of the Colony of Fiji undertook to study the value of carbon tetrachlorid in the treatment of hookworm disease in human beings, and, during the period from Feb. 14 to May 30, 1922, administered the drug to more than 20,000 persons. Because it is considered that the information obtained is valuable enough to warrant wide distribution, the steps leading up to this series of treatments and the observations resulting from them are here summarized.

PRELIMINARY TESTS WITH CARBON TETRACHLORID

A number of cautious tests were made in the Colonial Hospital, Suva, under the supervision of the resident medical officer. After the dose of the drug had been given the patient, his stools were washed and the worms counted for three days. A test treatment was then given one week later, and the stools again washed and counted for three days to recover the remaining worms. Thus, the percentage of drug efficiency was established. All this work was done by a European assistant of wide experience, aided by Fijian medical students.

Every one knows how difficult it is to control any kind of native for three days of trial and three days of test treatments. Among East Indians, it is especially difficult at present, when they are feeling the first "growing pains" of a national spirit. From some trial treatments and some test treatments, the stools were lost; but in the following group, every necessary condition of the treatment was fulfilled.

The first test was performed on a group of four Indians. They were given a purge of castor oil on the evening preceding the treatment. The carbon tetrachlorid was given at 7 a. m. on an empty stomach. There was no succeeding purge. A test treatment of 3 c.c. of oil of chenopodium was given one week later, Darling, Barber and Hacker [2] having shown that such a test treatment after a trial treatment removes all remaining worms.

During the three days following the administration of 3 c.c of carbon tetrachlorid, 244 worms were expelled, and four worms were expelled during the three days following the test treatment of 3 c.c. of oil of chenopodium. The total number of worms expelled was 249; the percentage of worms expelled by one dose of 3 c.c. (45 minims) of carbon tetrachlorid was 98. One of the persons treated, having ninety-five worms, was cured.

In a second trial, 4 c.c. (60 minims) of carbon tetrachlorid was given, with no preliminary purge, to two adult Indians. The usual test treatment was given after a week. In the first case, 185 worms, and, in the second case, 528 worms were expelled in the three days following the administration of carbon tetrachlorid. Following the test treatment of 3 c.c. of oil of chenopodium, four worms were expelled by the first patient and twenty-four by the second patient, in three days. The total number of worms expelled by the first patient was 189; the percentage of worms expelled by one dose of 4 c.c. of carbon tetrachlorid was 97. The total number of worms expelled by the second patient was 552; the percentage of worms expelled by one dose of 4 c.c. of carbon tetrachlorid was 96.

At the Dilkusha Indian Mission, the first mass treatment of 500 persons was made. The worms recovered from twenty-four Indians who ranged in age from 4 to 18 were counted. An arbitrary dose of

10. St. Lawrence, William: Effect of Tonsillectomy on the Recurrence of Acute Rheumatic Fever and Chorea, J. A. M. A. **75**: 1035 (Oct. 16) 1920.

* The experiments described in this paper were made during the progress of a campaign for the relief and control of hookworm disease, conducted by the government of Fiji in cooperation with the International Health Board of the Rockefeller Foundation.

1. Hall, M. C.: The Use of Carbon Tetrachlorid for the Removal of Hookworms, J. A. M. A. **77**: 1641-1643 (Nov. 19) 1921.

2. Darling, S. T.; Barber, M. A., and Hacker, H. P.: The Treatment of Hookworm Infection, J. A. M. A. **70**: 499-502 (Feb. 23) 1918.

0.2 c.c. (3 minims) to the year of age, with a maximum dose of 3 c.c. (45 minims) for the ages from 15 years upward, was given to these twenty-four persons. There was no preliminary purge, nor any purge following the treatment unless the bowels failed to act. The persons treated were lightly infested, as most of them had for several years been receiving treatments for hookworm disease.

The fourth test was made on twenty-four persons, with no preliminary purge. Following the administration of 0.2 c.c. of carbon tetrachlorid, to the year of age, up to 15, 397 worms were expelled in three days. Following the test treatment of 3 c.c of oil of chenopodium, five worms were expelled in three days. The total number of worms expelled was 402; the percentage expelled by one dose of carbon tetrachlorid was 99.

Dr. Kalamkar made fourteen tests in the government jail in Suva. Most of the persons had previously received several treatments for hookworm disease, and the average worm count was low. Seven Indians and seven Fijians comprised the group. Counts were made for only two days after the trial and the test treatment. The dose was given on an empty stomach at 7 a. m., with no preliminary purge. Three hours later, an ounce of Epsom salt was given.

Test 5 was made on fourteen persons, with no preliminary purge. The number of worms expelled in forty-eight hours after the administration of 4 c.c. of carbon tetrachlorid, followed three hours later by 1 ounce of magnesium sulphate, was 215. The number of worms expelled in forty-eight hours after the test treatment of 3 c.c. of oil of chenopodium was 13. The total number of worms removed was 228; the percentage removed by one dose of carbon tetrachlorid was 94.5.

Seven of the patients were cured by the one dose. It is recognized that it is more difficult to secure a high percentage of drug efficiency with a light infestation than with a heavy one. Originally, there were sixteen persons in this group, only four of whom were shown by the microscope to be infested. After all of the original sixteen had been treated, worm counts revealed that only two had been negative.

SYMPTOMS

Almost no symptoms were produced in the fourth group that received the purge after the drug, not one person being incapacitated for his regular duties. With the previous tests, either with or without the preliminary purge but with no purge following the administration of the drug, some persons had minor symptoms. Many were sleepy for several hours, two small adults in Test 3 vomited, and several persons had severe headaches for two or three days.

Test 5 was made on a young Indian who was working in the office. He was given 3 c.c. (45 minims) of carbon tetrachlorid at 7:45 a. m. He had had five bowel movements by 10:15 a. m., which, when washed, gave eighty-five hookworms. The total count for three days was 101 worms. The test treatment demonstrated that he was cured. This illustrates the rapid rate at which this drug expels the worms.

On the basis of these tests, made under his immediate observation, the chief medical officer, Dr. A. Montague, adopted carbon tetrachlorid as the drug to be used for the treatment of hookworm disease in the government institutions in Fiji, and recommended its use by the Bureau of Ankylostomiasis for routine field treatments. It was decided to adopt the dosage of 0.2 c.c. (3 minims) to the year, with an adult dose of from 3 to 4 c.c. (from 45 to 60 minims), depending on the size of the adult. The drug was to be given in water on an empty stomach, followed in three hours by 1 ounce of magnesium sulphate.

WORK IN DETAIL

From Feb. 14 to May 30, 1922, the staff treated more than 20,000 persons with carbon tetrachlorid, and it is expected that, as the plan of campaign develops, at least 6,000 a month will be reached. Even greater numbers might be handled in more closely settled countries with tractable inhabitants.

The 20,000 treated persons were composed of 1,000 Europeans, 6,500 Indians and 13,000 Fijians. Original examination with the microscope revealed an infestation rate of 89 per cent. among the Fijians and of 93 per cent. among the Indians. To date, reexamination has been made of 823 persons in this district, of whom seventy-two were found to be still infested. This indicates that the single treatment method has reduced what was originally a 100 per cent. infestation to an infestation of less than 9 per cent. It is only reasonable to expect that as the untrained staff becomes better qualified and field methods improve, this percentage will be still further reduced. As a matter of fact, better results are already being obtained each month. The persons reexamined were not selected but were taken as they were found, more than half of them being Indians.

COST

The cost of the work for the three and one-half months under discussion has been £387, exclusive of the salary of the director, which sum, in a large enough area, could be spread over at least four more units of the same size. However, the cost includes every other charge, among which is that of some nonexpendable equipment. The determination of this cost should be spread over a longer period of time to give a fair estimate. If the sum of £387 is divided by the number of treatments (20,500), the cost of each treatment is found to be fourpence halfpenny.

DOSAGE

The dose given is 0.2 c.c. (3 minims) to the year of age, up to the age of 15, when the adult dose of from 3 to 4 c.c. (from 45 to 60 minims) is reached. The maximum dose depends on the size of the adult. It may be shown later that much larger doses than this can be given safely.

Children take the drug, in this dosage, better than adults. Three c.c. (45 minims) has been given to many adults over 80 and to one man of 93. The dosage indicated is administered to all ages from 2 years upward.

METHOD OF ADMINISTRATION

The drug is placed on a tablespoon or in a small glass, covered with water, and swallowed. It has a faint smell, reminding one of carbon disulphid, but no taste. When swallowed it may produce a sensation of heat. At first, no preliminary purge was given, and magnesium sulphate was taken if the bowels did not act. Later, it was found that most symptoms were eliminated by a routine dose of magnesium sulphate administered three hours after the drug. To obtain the best results, the drug was given on an empty stomach. A mild laxative on the preceding

day proved beneficial when the patients suffered from constipation. Though the patients were advised to rest for the day, they did not do so, and nearly all of them carried on their usual work.

SYMPTOMS AND PHYSIOLOGIC EFFECTS

The symptoms seemed to depend on the amount of absorption of the drug by the human host. The drug itself is a purge when taken in sufficient dosage on an empty stomach. The purgative action seemed to be diminished or lost, however, when the medicine was taken by one suffering from constipation, or when food had been taken just before or just after the drug. It is in these cases that symptoms of absorption occurred. These symptoms seem to be the same as those exhibited by a person recovering from chloroform anesthesia. The commonest is a dull headache, which may last for two or three days and is best relieved by free purging with magnesium sulphate. A few patients reported nausea and vomiting; many were sleepy for several hours after taking the medicine, and a few who followed directions to the letter said that they had suffered from headache. Since magnesium sulphate has been given as a routine measure, headache symptoms have rarely been reported. With the cases under control, no symptoms are ever heard of. Recently, at Nukulau Quarantine Station, 360 Indian immigrants were treated with somewhat larger doses, and not a single person had nausea or vomiting, or reported a headache.

The tests seem to indicate that there was most absorption when there was no purge; that there was some absorption when the preliminary purge was given, and that there was almost none when the purge was taken several hours after the drug. The fact that not a single death has resulted among the 20,000 people who have been treated with an adequate dose of the drug, administered by relatively uneducated Fijian and Indian assistants, speaks for the safety of the medicine. Legal action has forced no one to take the treatment, and the fact that with such a small staff so many persons have been treated in so short a time demonstrates that the drug is easy to take, and produces few symptoms. Such urinary records as have been secured have shown nothing pathologic. The action of the heart seems to be slowed a few beats a minute for two or more hours.

CONTRAINDICATIONS

Alcohol is a contraindication. The severest symptoms have been found in those who have taken alcoholic drinks in the period intervening between several hours before and several hours after taking the drug. The ingestion of food just before or after taking the drug produces a very constipating effect and results in increased absorption.

EFFECTIVENESS IN REMOVING PARASITES OTHER THAN HOOKWORM

Carbon tetrachlorid, in the dosage here given, is not so effective a vermifuge as oil of chenopodium for removing *Ascaris*, only 40 per cent. of them being removed by the Fijian tests. This is regrettable, particularly in Fiji, where there is so high a rate of infestation with this parasite.

The drug occasionally removes *Trichocephalus dispar* in small numbers, but it does not cure the disease. It seems, however, to remove *Oxyuris vermicularis* in large numbers.

PUBLIC SUPPORT

By no means the least valuable feature of carbon tetrachlorid treatment is the fact that, with it, it is easy to secure individual and public cooperation, as there is much less opposition to a campaign in which this drug is used than to one employing chenopodium or thymol. Rarely is there a refusal to take treatment. The dispensary in Suva, in response to public demand for treatment, opened two months before it had been planned to begin work in that district. In this preliminary period, 2,000 persons were treated at their own solicitation.

CONCLUSIONS

1. Carbon tetrachlorid is a vermifuge and vermicide of great potency.
2. It gives little discomfort to the patient.
3. It permits of rapidly treating, at a low cost, vast populations suffering from hookworm disease.
4. Reexamination of the feces of 823 treated patients indicated that one treatment administered to each individual in a given area had lowered the original infection rate of 100 per cent. to less than 9 per cent.
5. Clinically, the standard of health of the community is immediately raised.

CALCULOUS ANURIA

REPORT OF CASE

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The number of reported cases of calculous anuria in which recovery has followed operation or ureteral catheterization is so small that it seems justifiable to add another one.

REPORT OF CASE

History.—A woman, aged 34, married, was first seen on account of pain in the right upper quadrant of the abdomen. The onset had been sudden, about eight weeks before admission to Michael Reese Hospital. The pain had recurred periodically, but with increasing intensity. The pain bore no relation to the ingestion of food and did not radiate.

Physical Examination.—This was negative except for slight tenderness on pressure over the right kidney region. There were no symptoms referable to the urinary tract. Roentgenographic examination of the gastro-intestinal tract was negative. In the roentgenograms which were made for the purpose of detecting the possible presence of gallstones, two small shadows, as shown in Figure 1, were seen, lying within the larger shadow of the right kidney. Further study of the roentgenograms of the urinary tract revealed also an oblong shadow in the region of the left kidney. A pyelogram of the right kidney confirmed the diagnosis of two calculi in this organ. One of the shadows on this side was oval and located at the outlet of the renal pelvis. The other and smaller one was thought to be in the parenchyma of the lower pole. The bottle-shaped shadow on the left side was lying obliquely in the pelvis of the corresponding kidney. The pyelogram also revealed the existence of a hydronephrosis of moderate degree on the right side.

The ureteral orifices and bladder presented no abnormal changes on cystoscopic examination. No obstruction to the passage of a No. 6 catheter was encountered in either ureter. Many pus cells were found in the specimen of urine from the right kidney, and only a few in the specimen from the left side. Phenolsulphonephthalein was excreted in larger amount and appeared more rapidly in the urine from the right than in that from the left side.

First Operation.—The presence of a calculus at the ureteropelvic junction and the apparently better function of the

right kidney led me to operate on this side first. Aug. 14, 1922, an oval calculus 1.5 cm. long and 0.5 cm. wide was removed from the dilated, much inflamed pelvis of the right kidney through a pyelotomy incision. The second and smaller calculus was in the parenchyma of the lower pole and was easily delivered through a small nephrotomy incision.

Course.—The amount of urine passed during the six days following this right side operation indicated excellent function of both kidneys. The convalescence was uneventful until the evening of the sixth day, when the patient suddenly complained of severe colicky pain in the left side of the abdomen. The syndrome was that of a typical ureteral colic, with marked tenderness over the left kidney. During the following twelve hours, 8 ounces (250 c.c.) of urine containing many red cells was voided. When seen early on the following morning (August 20), the patient presented the picture of severe shock. The pulse was rapid, small and soft; the skin was cold, and the lips were cyanotic. She had vomited at frequent intervals since the onset of the attack, and on the morning of the 20th had a severe chill followed by high fever.

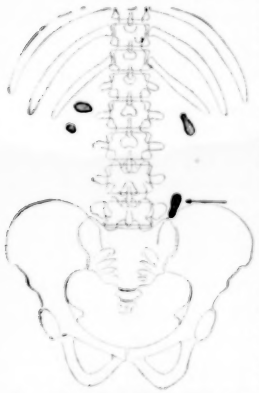

Fig. 1.—Tracing of roentgenogram of the urinary tract in a case of calculous anuria. The lighter shadows represent the preoperative location of the calculi in the right and left kidneys, respectively. The dark shadow to which the arrow points on the left side represents the location at which the left renal calculus, the cause of calculous anuria, was found in the ureter.

A diagnosis of probable propulsion of the left side calculus (Fig. 1) from the renal pelvis to the ureter was made. Cystoscopic examination revealed the presence of only a few drops of urine in the bladder.

A roentgenogram of the urinary tract was made immediately, but was of no assistance because the patient was so restless that a satisfactory picture could not be obtained.

A No. 6 ureteral catheter was easily passed to the renal pelvis on the right side, and about 2 c.c. of clear urine was obtained. On the left side, an obstruction was encountered in the midportion of the ureter. Repeated attempts to pass this obstruction were unsuccessful. About 10 c.c. of a clear watery fluid was, however, obtained through the ureteral catheter on the left side. Both ureteral catheters were left in situ for nearly three hours. During this period, no urine was obtained from the left kidney, and only 10 c.c of urine, containing many red cells, from the right side.

On account of the serious condition of the patient, further attempts to pass the obstruction on the left side were deemed inadvisable.

Second Operation.—The left kidney and upper ureter were exposed through the usual incision. A large quantity of serous fluid escaped from the perinephritic tissues. The kidney was large and deeply congested, and its capsule was very tense. The ureter was greatly distended as far down as the beginning of its iliac portion (Fig. 1), where a large calculus was tightly impacted. This was easily delivered through an incision in the lumbar ureter. The form and size of the calculus confirmed our diagnosis of the migration of the one seen in the left renal pelvis in the original roentgenograms. Urine was voided about eight hours later, and the amount rose steadily until it reached 69 ounces (2,070 c.c.) on the fourth day after the relief of the anuria. Vomiting, however, continued until nearly forty-eight hours after the ureterotomy, showing the extremely toxic condition of the patient.

Aside from an extensive infection of the parietal wound, the patient made an uneventful recovery.

Calculous anuria can occur in cases in which one of the following conditions exists:

1. Both kidneys obstructed by calculi, as shown at *A* in Figure 2.

2. Both ureters obstructed by calculi as shown at *B*.

3. One ureter obstructed and opposite kidney nonfunctioning as a result of (*a*) more or less complete destruction by disease, as shown at *D*; (*b*) the presence of some congenital condition, such as infantile kidney, as shown in Figure 3; complete absence of development (solitary kidney), or of congenital hydronephrosis; and, finally, (*c*) as the result of reflex inhibition of secretion (renorenal reflex).

4. Pelvis or ureter of remaining kidney obstructed after nephrectomy.

The case just described belongs in the third group. The right kidney from which calculi had been removed six days prior to the onset of the left side obstruction had not regained its functioning completely. I believe that reflex inhibition also played a part, because the size of the left kidney and ureter as found at operation indicated the existence of a complete obstruction on this side for a period fully as long as that during which the pain was first complained of on the left side; that is, twenty-two hours.

There has been considerable discussion as to the existence of a renorenal reflex; that is, obstruction on one side inhibiting the secretion of the opposite kidney. Legueu and others (Rovsing, Albarran, Casper, Watson) are of the opinion that, when this occurs, the supposedly inhibited kidney has already ceased to function long before the onset of the anuria, as the result of more or less complete destruction by disease. Kümmel[1] states that he has never seen a case of true reflex anuria. Others, like Guyon, Israel, Marion and Baetzner, believe that such a reflex inhibition can occur even when the opposite kidney is perfectly normal.

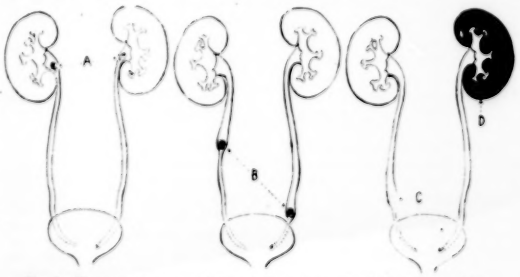

Fig. 2.—Diagrammatic representation of three forms of calculous obstruction causing anuria: *A*, calculi obstructing both renal pelves; *B*, calculi obstructing both ureters at different levels; *C*, calculus obstructing one ureter, the opposite kidney (*D*) being destroyed by disease or having been removed.

1. Kümmell: Handbuch der praktischen Chirurgie, Stuttgart, F. Enke 4, 1922.

My own case is very instructive in this respect. The escape of only 10 c.c. of urine from the ureteral catheter on the nonobstructed (right) side during a period of nearly three hours shows that reflex inhibition must have played a rôle. The fact that 8 ounces (250 c.c.) of urine was passed prior to this observation indicates some functioning power of this right kidney, since the left side was completely blocked, I am certain, during the twenty-two hours following the onset of the colic.

Another question which arises in connection with the case just reported is, How long should one wait before operating? The period of tolerance varies greatly. Watson found that the average in sixty-two cases was from five to six days. In four, it was only twenty-four hours. In fourteen, it was from ten to sixteen days. As an example of an unusually long period of tolerance, that in the case of Frank [2] may be cited; namely, twenty-two days. Uremia may occur without warning, and a patient may die without symptoms of uremia, that is, during the period of tolerance. Judging from the fulminant manner in which the symptoms of toxemia developed in my case within sixteen hours, both Dr. D. L. Schram, who saw the patient in consultation, and I felt that further delay was dangerous. In this connection, let me warn against too prolonged an effort to relieve the anuria by ureteral catheterization. One is perfectly justified when anuria has existed for only twenty-four to forty-eight hours in attempting to pass the obstruction or even to deliver the calculus by nonoperative methods for another forty-eight hours; but even urologists, such as André, who have been successful with ureteral catheterization, etc., urge operation on the fifth day, at the latest, of the period of tolerance.

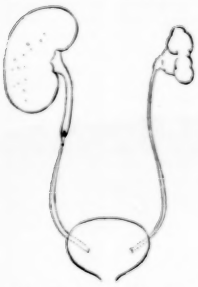

Fig. 3.—Diagrammatic representation of conditions found at necropsy in a case of calculous anuria due to obstruction of the right ureter, the opposite kidney being infantile. The patient entered the hospital in a state of coma. No operation was performed.

The older statistics of Watson [3] as to the comparative merit of operative versus nonoperative treatment are not of great value at present. The rapid advances in diagnostic methods enable us to recognize these cases much earlier than it was possible to recognize them when the cases collected by Watson were observed. Another factor is that, when these statistics were collected, there had been comparatively few attempts to relieve the anuria by ureteral catheterization alone. In a recent paper, Thevenot [4] reported two cases of his own and compiled reports of thirty-eight others in which catheterization had been tried. There were thirty-two recoveries, and to this number can be added three cases of Buerger, Frank and Baetzner.[5]

Calculous anuria is most frequently encountered clinically in two groups of cases: (*a*) those giving a history of previous attacks of ureteral colic with or without transitory anuria, and (*b*) those in which the anuria is the first symptom.

One can place but little reliance, in the majority of cases, on the clinical history as to the side which is obstructed. A roentgen-ray examination of the entire urinary tract should be made at the earliest possible moment. This should be supplemented by ureteral catheterization. These two methods will enable one to localize accurately not only the side on which the obstruction has occurred, but also its approximate level in the ureter, an indispensable guide for the operative incision.

If these two methods of diagnosis are not available, one is compelled to resort to some operation on the side on which the colic has occurred most recently.

The ideal method of treatment is, of course, relief of the anuria by ureteral catheterization, and expulsion of the calculus by the various nonoperative methods which are today familiar to every one. As I have already stated, one should not continue with these methods for more than four or five days at the utmost. The operation of choice is ureterotomy, as performed in the case reported. If the obstruction has not been localized, it is best to be content with simple opening and drainage of the renal pelvis on the obstructed side, in preference to nephrotomy or similar procedures, such as decapsulation.

30 North Michigan Avenue.

2. Frank: Surg., Gynec. & Obst. **20**: 526, 1915.
3. Watson (Watson and Cunningham: Genito-Urinary Diseases, Philadelphia, Lea & Febiger, 1908) compiled 205 cases. The mortality in the cases in which operation was performed (ninety-five) was 46.3 per cent., and that in the cases in which operation was not performed (110) was 72.7 per cent.
4. Thevenot: Progrès méd. **35**: 129 (March 20) 1920.
5. Baetzner, Wilhelm: Diagnostik der chirurgischen Nierenerkrankungen, Berlin, Julius Springer, 1921.

MULTIPLE MYELOMA

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Since 1847, when Bence-Jones [1] first described a substance occurring in the urine of a patient said to have "mollities ossium," there has been much study and thought put on this rare disease, which was first named multiple myeloma by Rustizky,[2] in 1873. It must be confessed that but little more is known of the cause and treatment of the disease or of the origin of the curious Bence-Jones body, which is so frequently found on urinalysis, than when it was first described. Kahler, in 1889, reported a case of eight years' duration. The disease is often called by his name.

Multiple myeloma has been defined by Ewing [3] as a "specific malignant tumor of the bone marrow, arising probably from a single cell type. It is characterized by multiple foci of origin, a uniform and specific structure composed of plasma cells or their derivatives, rare metastases, albumosuria and a fatal termination."

The disease is so rare that thorough reviews of all cases reported have been made from time to time. From 1848 to 1907, Permin [4] had found only forty cases. In 1916, Martini [5] had collected 204 case records.

The tumors arise from the elements normally present in the bone marrow, and may show the characteristics of parenchyma cells of the marrow, of leukocytes and their immature forms (myelocytes of various types), or of nucleated red cells. Metastases have been reported in rare cases.

1. Bence-Jones: Phil. Trans. Roy. Soc., London **1**: 55, 1848.
2. Rustizky: Deutsch. Ztschr. f. Chir. **3**: 162, 1873.
3. Ewing, James: Neoplastic Diseases, Philadelphia, W. B. Saunders Company, 1919.
4. Permin: Myeloma, Hospitalstidende **15**: 1241, 1265, 1907.
5. Martini: Kahler's Disease, with Illustrations of a New Case, Policlinico **23**: 382, 1916.

The symptoms are most frequently referred to the bones, the patient complaining of pain, often periodic at first, with intervals of freedom, so that a diagnosis of rheumatism or of neuritis is often made. Deformity in the form of protuberances or of shortening of the stature by curvature of the spine may be noticed first. Kahler's patient, who lived eight years, developed a pressure sore under the chin because of the shortening of the cervical spine, which brought the chin to rest on the sternum. Symptoms due to pressure on the spinal cord or nerves by disease of the vertebrae may be most prominent, so that paralyses of the bladder, rectum and legs may be complicating factors. Pain in the chest on breathing, due to involvement of the ribs or sternum, may simulate an intrathoracic disease. Fractures may occur on slight pressure. Hirschfeld [6] mentions a case in which the ribs were broken by the pressure of a stethoscope. Any of the bones of the body may be involved, though there seems to be a tendency to the appearance of the earliest symptoms in the ribs, vertebrae and sternum rather than in the long bones.

The Bence-Jones body is excreted in 80 per cent. of cases, according to Rosenbloom,[7] who has studied this phase of the disease and has collected data from various workers; but its origin is as much of a mystery as it was at the time of its discovery, in 1848. It is generally thought to be a product of abnormal metabolism in the body, caused by the enzymotic action of the tumor cells on the serum globulin and excreted as a foreign body by the kidneys. It has been found in the blood serum of a patient who also excreted it in the urine.[8] It may be intermittent in its appearance.

A disease with so marked a destruction of the bone marrow might be expected to show some disturbance in the blood picture. In the stage of cachexia, a secondary anemia is commonly present. Occasionally, 5 or 6 per cent. of myelocytes have been found, but there is no typical blood picture, and the finding of marked blood changes speaks against multiple myeloma.

In the course of the disease, cachexia is a prominent and almost universal symptom. The disease is one of adults between the ages of 40 and 60 in 60 per cent. of cases.[9] Males are more frequently affected. The duration varies from six weeks to eight years. In a short series of cases found in the recent literature, with the one here reported, the average length of life was a year and a half after the onset of symptoms. Pneumonia and asthenia are most frequently given as the immediate cause of death.

REPORT OF CASES

CASE 1.—*History.*—A man, aged 38, married, a sales manager, came to the medical division of the Nicollet Clinic, June 21, 1921, with a complaint of albuminuria. The family history was unimportant. The patient's habits were good except for a tendency to overwork. At 8 years of age, the patient fell astride a rail fence, with moderate injury to the tissues of the perineal region, but was not confined to bed. He had typhoid fever in childhood and two attacks of influenza. A soft chancre, fifteen years before, had been treated and cured by the cautery. There were no skin symptoms. The patient had passed life insurance examinations on several occasions.

Present Illness.—About May 1, 1921, the patient noticed a severe pain in the right side of the rectum and penis, and in the right leg, thigh and testicle. There was some pain in the right sacro-iliac region. He consulted his family physician, who found albuminuria but did not make a rectal examination. The patient rested in bed for three weeks on a low protein diet, but the albumin was constantly present in the urine and the pain in the right sacro-iliac region persisted, although there was improvement in the perineal pain. After getting up from his rest, he had some fatigue and constant pain in the right lower back, which his physician called neuritis. The symptoms were not severe, and he came for advice about the albuminuria rather than because of the pain.

Examination.—The patient was a small man in a condition of fair nutrition and with good color. He was comfortable and did not appear sick, but was worried about his persistent albuminuria. He had infected tonsils and a normal heart, lungs and abdominal organs. The blood pressure was: systolic, 122; diastolic, 90. There was no evidence of arteriosclerosis. There was distinct tenderness in the right sacro-iliac region, and rectal examination disclosed a mass on the ventral surface of the sacrum, about 8 cm. in diameter, with a flat base. This mass was near the median line, but more to the right than to the left, of firm but not bony consistency, rounded, fairly smooth, with the rectal mucosa freely movable over it. Sigmoidoscopic examination revealed a normal mucosa. Cystoscopic examination revealed no disease of the kidneys, ureters or bladder. A roentgenogram of the chest was negative except for a bronchial thickening in the lower lobes. Roentgen-ray examination of the sacro-iliac region revealed an area of almost complete absorption involving the right side of the lower three segments of the sacrum. The blood count was: hemoglobin, 90 per cent.; white blood cells, 9,800; polymorphonuclears, 68 per cent.; large lymphocytes, 11 per cent.; small lymphocytes, 15 per cent.; transitionals, 1 per cent.; eosinophils, 5 per cent. The Wassermann reaction was negative on repeated tests, and the spinal fluid was negative. Urinalysis revealed: albumin, four plus (from 1.75 to 2.5 gm. per liter in a twenty-four hour specimen); phenolsulphonephthalein, 45 per cent.; specific gravity, from 1.008 to 1.020. Blood chemistry tests revealed: sugar, 1.12 per cent.; urea nitrogen, 16.25 mg.; creatinin, 1.35 mg.

SUMMARY OF SEVEN REPORTED CASES OF MULTIPLE MYELOMA

Case	Sex*	Age at Onset, Years	Duration of Symptoms, Months	Bence-Jones Protein
1	♂	38	5	Present
2	♀	46	3	Not reported
3	♀	62	9	Absent
4	♀	65	11	Absent
5	♀	57	6	Absent
6	♀	63	6	Not reported
7	♂	52	12	Absent

* In this column ♂ indicates male; ♀ female.

Treatment and Course.—In view of the persistent albuminuria, of the bone tumor of unknown cause and of the history of a venereal lesion, it was decided to give him a course of antisyphilitic treatment as a therapeutic test. He developed a mercurial stomatitis, but no decrease in his sacral tumor. July 1, the patient noted several painless nodules on his skull. Roentgenograms disclosed several areas of bone absorption from 1.5 to 4 cm. in diameter. No bone production or invasion was seen. A soft gelatinous tumor about 3 cm. in diameter, attached to the skull and penetrating as far as the dura, was removed under local anesthesia. Microscopic examination made at the University of Minnesota Department of Pathology revealed that the growth was a myeloma. Subsequent to this, a specimen of urine was sent to the laboratory of the Mayo Clinic, where Bence-Jones protein was found by the Bradford test (layer test with concentrated hydrochloric acid).

The pain in the sacral and perineal regions continued. There were no fractures or any new tumors observed, although the patient's wife reported that the swelling in the sacral region increased some weeks before his death. He

6. Hirschfeld, in Krause and Brugsch: Spezielle Pathologie innerer Krankheiten, 1920.
7. Rosenbloom, J.: Bence-Jones' Protein, Med. & Surg. **1**: 257 (May) 1917.
8. Jacobson, V. C.: Multiple Myelomata, J. Urology **1**: 167 (April) 1917.
9. Vance, B. M.: Multiple Myelomata, Am. J. M. Sc. **152**: 693 (Nov.) 1916.

gradually lost strength and weight, and died, apparently of exhaustion, October 4, five months after the onset of his symptoms. He was not seen by a physician the last two months of his life, and a report was obtained from his wife after his death. Necropsy was not permitted.

The clinical diagnosis was multiple myeloma.

Six other cases are recorded in the Department of Pathology of the University of Minnesota, following biopsy or necropsy, and have been made available through the courtesy of Dr. E. T. Bell of that department. They are here summarized:

CASE 2.—A man, aged 46, who had been having pain in the back for three months, presented a mass at the end of the sacrum, palpable by rectal examination. The patient died of lobar pneumonia, and at necropsy a myeloma was found, involving the ilia, the sacrum, the vertebrae and one rib.

CASE 3.—A woman, aged 62, had noticed a mass in the right side thought to be a tuberculous kidney, and had had pain in the right axilla for nine months. There was a small amount of albumin and some leukocytes in the urine. Death occurred from pyelonephritis. Myelomas were found on two ribs, but on no other bones.

CASE 4.—A woman, aged 65, who had complained of weakness and pain in the chest, back and hips for eleven months, had sustained a fracture of the wrist and ribs eight years previously and again of a rib six years previously. There was a marked hypersensitiveness of the sternum and of the long bones of the body. Several ribs showed fusiform swellings. Cystlike degeneration of all the bones was shown in roentgenograms. The temperature ranged from 99 to 101 F. Blood examination revealed: 59 per cent. hemoglobin; 3,100,000 red blood cells; 14,200 white blood cells, with 69 per cent. lymphocytes and 25 per cent. polymorphonuclears. The urine showed a faint trace of albumin, but no Bence-Jones protein, on three tests. The patient died of lobar pneumonia. At necropsy, the ribs were fragile and showed many fractures. There was very little calcium in the bones and there was red marrow in the femur.

CASE 5.—A woman, aged 57, had had spontaneous fractures of the legs and forearms for several years and had been on antisyphilitic treatment. Six months previously, she had become incapacitated by severe pain in the left hip, which continued. At times, a trace of albumin was found in the urine. Death was due to lobar pneumonia and necropsy revealed tumors in the ribs, great trochanter, innominate bone and one thoracic vertebra.

CASE 6.—A man, aged 63, who had recovered from a double empyema four and one-half years previously, had pain in the lower back, developing six months previously. Rarefaction of the bodies of the lumbar vertebra was revealed by roentgen-ray examination. Abscesses of the thorax infiltrating the muscles developed before death, which was due to a purulent bronchitis and bronchopneumonia. Necropsy revealed myeloma of the lumbar vertebrae.

CASE 7.—A man, aged 52, who was admitted to the hospital complaining of pain in the region of the dorsal vertebrae, developing first as recurrent attacks of backache, beginning about one year previously, had, for the past five months, suffered pain daily which for three weeks had been associated with numbness of the legs and a staggering gait. The roentgen ray revealed destruction of the body of the sixth dorsal vertebra, probably pressure atrophy due to a cord tumor. The urinalysis was negative. The blood Wassermann reaction was positive; the spinal fluid showed a doubtful positive and a negative Wassermann reaction on two tests. The cell count was 7 and 150, and the Nonne-Apelt reaction was positive both times. Arsphenamin was given, with some improvement in sensation. A laminectomy was performed, revealing a myeloma of the sixth dorsal vertebra. The patient died shortly after this. There was no necropsy.

COMMENT

Multiple myeloma should be suspected in cases of backache or pains in the bones of obscure origin. All the tests available for the Bence-Jones body should be tried repeatedly. The absence of this protein in no way speaks against myeloma as a diagnosis.

It is of interest to note that in this small group of seven there are four men and three women; the average age at onset was 55; the duration of symptoms from onset to death varied from three months to twelve months, with an average of seven and one-half months; Bence-Jones proteinuria was found in only one of the seven and that, after many tests, had been negative. In several of these patients the diagnosis had not been made until necropsy was performed.

1009 Nicollet Avenue.

RADIUM IN TREATMENT OF NEW GROWTHS OF THE MALE BLADDER

A CONVENIENT AND EFFECTIVE METHOD UTILIZING AN OPEN AIR CYSTOSCOPE *

WILLIAM NEILL, JR., M.D.
BALTIMORE

For many years in this clinic, the open air cystoscopic technic has been in daily use. It is convenient and rapid, affords direct information as to the bladder surface, and allows of the widest range of manipulative procedures within the entire bladder. As early as 1893, Dr. Kelly had made a speculum 18 cm. long and 8 mm. in diameter, similar to the now well known Kelly female cystoscope, for investigation within the male bladder; but he was unable to secure an opportunity for a practical demonstration until Nov. 20, 1897. Two patients were provided through the courtesy of Dr. H. H. Young; one was a sexual neurasthenic, awkward to control, no cocain being used, but the principle was demonstrated and the bladder inspected, with the patient in the knee-breast posture. Another demonstration was made at the Mercy Hospital the same year, while a further demonstration was made before an audience of surgeons and urologists in St. Luke's Hospital, New York, the following year.[1] This method, however, was not employed by urologists for the male, and we ourselves had for years used only one or the other of the various modifications of the lens system water cystoscopes. Luys [2] of Paris constructed and extensively used an admirable instrument with a curved beak for direct vision with an electric light at the end of the cystoscope, giving perfect illumination with the patient in the dorsal posture, with the plane of the table at an angle of 45 degrees. The recognized utility of this method abroad is largely due to Luys' practical demonstrations. Dr. Geza Greenburg of New York has more recently devised a cystoscope which can be effectively used for intavesical radium application.

Dr. Kelly himself has always used the knee-chest posture as the one giving the best dilatation of the bladder and most convenient to him through long practice. While painless and best in females, this posture is not convenient in males; on the other hand, an exaggerated Trendelenburg posture with the head of the table lowered to an angle of 60 degrees gives an effectual air dilatation in all but contracted irritated bladders, and very fat subjects; in the latter groups,

* From the Howard A. Kelly Hospital.

1. Kelly, H. A.: Ann. Surg. **27**: 71 (Jan.) 1898; ibid. **29**: 475, 1898; Bull. Johns Hopkins Hosp. **9**: 62, 1898.
2. Luys, Georges: Endoscopie de l'urètre et de la vessie, Paris, 1905.

a general anesthetic will usually secure the desired result (Fig. 1).

I myself work with two instruments: the Greenberg [3] cysto-urethroscope and a Kelly cystoscope 16 cm. long and 10 mm. in outside diameter. This size Kelly cystoscope is easy to introduce in the average man. It is convenient to have a series beginning with a diameter of 7.5 mm. The instrument can be introduced with a straight obturator, but an excellent modification of Dr. Curtis F. Burnam twelve years ago allows

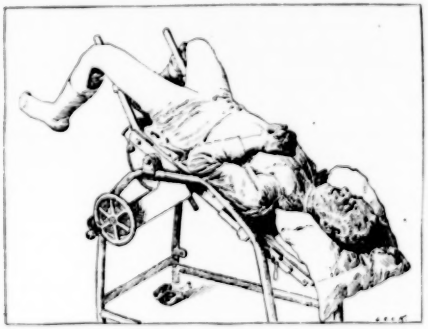

Fig. 1.—Position of patient on a Young cystoscopic table with the head lowered to an angle of 60 degrees; patient purposely not draped in order to show accurately the position.

the use of an obturator curved to take the prostatic urethra, and then straightened out and withdrawn when the cystoscope is once in the bladder. The illumination in the Greenberg instrument is by a small electric bulb in the vesical end of the instrument. The lighting in the Kelly cystoscope is by reflected light from a head mirror, exactly as in his method in women.[4] Though this has some slight inconveniences, it gives a good light, removes all possibilities of electrical breakdowns, and is as satisfactory in bleeding bladders as in normal ones. In describing the direct aeroscopic method, I would emphasize its value in this particular connection. With the instrument in the bladder, the operator puts on the commonly used head mirror and prepares for the inspection in a darkened room. An electric light is held close to the symphysis, making as small an angle as possible, so that the light can be easily caught by the head mirror, reflected into the bladder, and kept on the object. It may be necessary at this point to remove by suction residual urine lying in the base of the bladder. By an occasional automatic touch to the head mirror and a simple manipulation of the handle of the cystoscope, all parts of the interior are accessible to a direct inspection, with the exception of the retrosymphyseal region. It is helpful when examining the vertex to invert the abdominal wall above the symphysis with the free hand. A beginner experiences difficulty with the reflected light, as the head mirror is adjusted at an angle, and a slight movement leaves the field in the dark. After a little practice, however, it soon becomes as easy and simple as the examination of the throat and larynx. In this way, we can see each area in the bladder as clearly as through a suprapubic opening, and can thus determine accurately the size and position of any existing tumor or ulcer. Tissue for microscopic examination can likewise be quickly taken with suitable forceps, or fulguration or cauterization may be carried out. The ureteral orifices can also be seen and catheterized easily, and a small stone picked up and removed. Diagnostic wax bulb catheters of any desired diameter can be introduced into the ureter with a facility unknown by those who depend on a water cystoscope.

Passing to the subject in hand, the treatment of bladder tumors through a cystoscope should be limited to cases in which all parts of the growth can be clearly seen and outlined; if it is large and infiltrating, provided the general condition of the patient permits, and there is no evidence of metastases, the treatment should preferably be by suprapubic exposure. However, when an operation is contraindicated, such patients can be helped and should be treated by the cystoscopic method.

Fortunately, vesical tumors often give rise to early symptoms, and many are discovered at a stage when the cystoscope offers as simple and as effective a route as a suprapubic opening. This method is applicable in all growths confined to and around the neck of the bladder, papillomas, papillary carcinomas and infiltrating carcinomas of not over 4 cm. in diameter. Growths other than these without evident metastasis, extensive infiltration of the bladder wall, and all doubtful cases are submitted to a suprapubic section.

I have used radium emanation with two types of applicators, as shown in Figures 2 and 3. The radium emanation for surface treatment is contained within a tiny glass bulb, 3 mm. in diameter, encased in a small brass capsule measuring 1 by 0.5 cm. and 1 mm. thick, which in turn is placed in a second brass capsule, 3 by 1 cm. and of the same thickness, and screwed to the handle. The points for implantation, bare tubes or spicules, as they are called, contain the emanation in tiny glass capillary tubes, 2 mm. long and 0.5 mm. in diameter. These are placed in the end of the hollow needle on the point of the introducing instrument, and after it is implanted into the growth, the tube containing the radium is pushed out from the needle into the tissues by means of a stylet (Fig. 4).

In 1920, Dr. Robert M. Lewis (at that time an associate at this hospital), devised an excellent instrument for implanting bare emanation tubes into the naso-

Fig. 2.—Type of applicator used for intravesical surface radium treatment through the aerocystoscope.

pharynx and larynx, as well as for use in the female bladder through the Kelly aeroscope; the instrument I use is my modification of his original one. Care must be taken to insure an accurate estimate of the amount of emanation in each tube used, and it is imperative that each individual tube should be an active one before implantation.

For surface treatment, 100 milligram hours' radiation is the maximum dosage for each square centimeter of the area of disease. In using an applicator containing 1,000 millicuries, it is therefore necessary only to hold the applicator six minutes on each area to obtain the equivalent amount of radiation. In this way, a tumor with a surface of 9 sq. cm. would receive the maximum dosage in a total of fifty-four minutes. By using a stronger applicator, the actual time of exposure can be

3. Greenberg, G.: Ann. Surg. **70**: 212 (Aug.) 1919.
4. Kelly, H. A.: Am. J. Obst. **39**, No. 1, 1894.

further reduced. The entire treatment is finished in one or two exposures, extending over a period of from two to three days. This amount of surface irradiation should not be repeated within six weeks.

For implantation treatment, the small glass emanation points are implanted directly into the growth. We employ 0.5 millicurie of radium emanation to destroy 1 c.c. of tumor. In this way, with a number of introducing instruments prepared beforehand, we can quickly and accurately introduce from ten to fifteen of

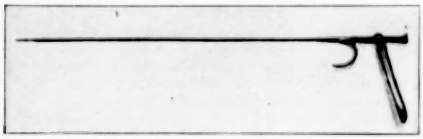

Fig. 3.—Instrument used for intravesical radium implantation treatment of bladder tumors through the aerocystoscope.

the points throughout all parts of the growth, the entire time consumed being about five minutes. The points are left permanently embedded in the tissue to decay, giving off their maximum activity by the end of seven days, but continuing slightly active for twenty-eight days; the action is local and caustic. An intensive treatment such as this should not be repeated until a period of two months has elapsed. We have found that a better result can be expected by using multiple

Fig. 4.—Actual implantation of emanation points into the tumor through the aerocystoscope; *A*, emanation point implanted into the growth.

points containing a fraction of a millicurie, rather than by implanting fewer stronger points. A number of these points escape with bits of the tumor and are discharged with the urine.

Geraghty [5] has described the implantation treatment, which I introduced at the Johns Hopkins Hospital. Through the courtesy of Dr. Young and Dr. Geraghty, I had the pleasure of demonstrating this method repeatedly. Not infrequently, a considerable amount of tenesmus is caused by this type of treatment, which is not experienced when the surface technic is used alone; it persists about two weeks, and is rarely severe. We note a perfect healing of the surface after a lapse of two months, and no complications have arisen from the remaining points.

5. Geraghty, J. T.: J. Urol. **7**: 33 (Jan.) 1922.

CUTANEOUS ALLERGY IN SYPHILIS

WITH SPECIAL REFERENCE TO THE LUETIN REACTION AND THE NECESSITY FOR CONTROLS IN INTRACUTANEOUS TESTS *

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AND
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Statements to the effect that cutaneous allergy to *Spirochaeta pallida* and its products develops during the course of syphilis are based on the reactions observed following the intracutaneous injection of "syphilin" (extract of fetal syphilitic liver), "pallidin" (extract of fetal syphilitic lung) and more especially of "luetin," a sterilized and ground up ascites agar culture of *Spirochaeta pallida*, as prepared by Noguchi. An extensive literature has accumulated on the use of the luetin reaction as a means of diagnosis for syphilis, but not a few investigators have reported nonspecific or doubtful reactions, with the comment that control fluids of the culture medium alone yielded reactions of the same or almost the same kind and degree.

The most thorough investigation bearing on the nonspecific phase of the luetin reaction is that of Stokes.[1] This investigator has observed that the intracutaneous injection of 0.5 per cent. solution of sterile agar and emulsions of normal skin elicit reactions in syphilis quite similar to those produced by luetin. Stokes has explained these reactions on the basis that agar and other substances are capable of adsorbing antiferments and thereby liberate or render active proteolytic ferments capable of producing toxic or irritating substances by processes of proteolysis and autolysis of the individual's serum and cells responsible for the inflammatory reactions of papulation and pustulation. Stokes has very clearly described this mechanism in the following words: "While the luetin reaction seems several steps removed from the plainer case of the agar reaction, a close examination of experimental evidence bearing on it gives ground for placing it, in large part at least, in the class of antiferment-adsorbent or anaphylatoxin reactions, and treating it as in the case of the reaction to agar, not as specific for syphilis, but as a measure, albeit perhaps a sensitive one, of the ferment-antiferment balance, and of the amount or intensity of action of nonspecific proteases in the body of the syphilitic."

Stokes believes that with luetin the processes are of a dual nature, that is, that antiferment is adsorbed not only by the ascites agar, but likewise by the fragments

* From the Dermatological Research Institute.

1. Stokes, J. H.: An Intradermal Reaction to Agar and an Interpretation of Intradermal Reactions, J. Infect. Dis. **18**: 402, 415 (April) 1916.

of *Spirochaeta pallida*, in which case the injection of luetin may be expected to yield somewhat stronger reactions than the control fluid of culture medium (ascites fluid and agar) alone, but that both processes are essentially nonspecific.

In our opinion, studies of this kind, interpreted in conjunction with the fundamental observations of Jobling, Eggstein and Petersen on ferments, antiferments and their balance, offer satisfactory explanations for the production of reactions following the injection of various substances (agar, blood, kaolin, gelatin, tissue and bacterial extracts, etc.) into the skins of healthy and diseased individuals; they do not, however, explain specific allergic skin reactions, and notably the intracutaneous tuberculin reaction, which may be elicited by the injection of 0.1 c.c. of a 1:10,000 dilution of tuberculin O. T., carrying an almost infinitesimal amount of glycerin-bouillon incapable of eliciting these nonspecific reactions. In other words, the physical theory of anaphylatoxin production enlisted for explaining the agar reaction is not acceptable in explanation of specific allergic reactions, which is very probably an intracellular, colloidal phenomenon without the essential production of such toxic substances as anaphylatoxins, proteotoxins, and the like.

Very probably, the intracutaneous injection of luetin may elicit a dual reaction; one nonspecific, due to the absorption of antiferment by the agar, ascites fluid and even fragments of *Spirochaeta pallida*, and the other specific, a true allergic reaction to pallida protein. But the latter has not been proved, and our experiments reported in this communication caused us to question whether true cutaneous allergy to culture pallida actually exists. On the other hand, there can be no question but that the intracutaneous injection of luetin into syphilitic patients has usually elicited more frequent and stronger reactions than those observed among nonsyphilitic persons; this difference may be ascribable, however, more to the development of nonspecific and nonallergic hypersensitiveness of the skin in syphilis, an enhancement of the nonspecific ferment-antiferment activities, than to the development of specific allergic sensitiveness to the proteins of *Spirochaeta pallida*. It was for the purpose of shedding more light, if possible, on the question of whether or not true cutaneous allergy developed in syphilis, that our experiments were conducted.

Fig. 1. — Reactions forty-eight hours after the intracutaneous injection of a tertiary syphilitic patient with *A*, 0.1 c.c. of undiluted luetin (upper); *B*, 0.1 c.c. of ascites agar control, and *C*, 0.1 c.c. of pure luetin or vaccine of *Spirochaeta pallida*. The luetin and its control produced reactions of similar kind and degree, but the pure luetin or vaccine of pallida produced nothing but a small area of erythema barely to be seen in the illustration.

TECHNIC EMPLOYED BY AUTHORS

In our investigations three products were employed: (*a*) ascites agar luetin prepared according to the original method of Noguchi, of six or more strains of pallida originally isolated by Noguchi, and, therefore, many years removed from syphilitic lesions; (*b*) ascites agar culture medium in exactly the same proportions as contained in the luetin and prepared in exactly the same manner, and (*c*) a saline suspension of washed *Spirochaeta pallida*. Naturally, the greatest interest was centered in the last preparation as being the most likely to yield true information as to the occurrence of intracutaneous reactions to the fragments and products of pallida alone and free of the constituents of culture mediums.

These vaccines of *Spirochaeta pallida* were prepared by cultivating the same strains as were used in preparing the regular luetin in fluid mediums and removing them by thorough centrifugation. The sediment of spirochetes was then washed at least once with sterile saline solution and resuspended in sufficient saline solution to give a turbid suspension, showing twelve or more spirochetes in each dark field by microscopic examination. The number of spirochetes in each unit volume was, therefore, somewhat higher than that present in ordinary luetin.

These suspensions were thoroughly shaken with beads, heated at 60 C. for an hour, cultivated for sterility and preserved with 0.3 per cent. tricresol. Duplicate samples of each of the three preparations were prepared in another laboratory [2] and employed by us in order to minimize the occurrence of any errors due to technic of preparation.

Each of the three products was injected intracutaneously into the forearms of groups of syphilitic and nonsyphilitic individuals. The amount injected was always 0.1 c.c. of each, but varying dilutions of the stock products were injected in order to elicit possible differences in the reactions. For example, the regular ascites agar luetin was injected in a dose of 0.1 c.c. undiluted, 1:2, 1:4, 1:8, 1:16, etc., at the same sitting. The control fluid of ascites agar was injected at the same time in the other arm in similar amounts. The pure luetin or vaccine of washed spirochetes was injected in a dose of 0.1 c.c. undiluted, 1:2 and 1:4, higher dilutions not being employed because of the complete absence of all reaction except that ascribable to trauma.

By injecting the luetin and its control in serial dilutions and then measuring the reactions at the end of forty-eight hours, it was hoped to elicit differences ascribable to the presence of pallida, which might be checked up by the reactions engendered by pallida alone in the washed suspension.

RESULTS

Without detailing or tabulating the results of a large number of tests, it may be stated that the reactions engendered by the regular luetins and their controls were almost identical in degree and extent. Minor differences occurred in some instances, as might be expected, but these were not constant in that sometimes a given dilution of the control fluid gave a slightly stronger reaction than the corresponding dilution of the luetin, and the reverse.

The intracutaneous injection of the pallida vaccine in a dose of 0.1 c.c. sometimes produced well defined areas of erythema and induration in syphilitic patients; but milder reactions of the same kind were observed among nonsyphilitic persons. In any set of tests con-

2. We wish here to express our deep appreciation of the aid rendered by Mr. F. Glenn in preparing these products for us.

ducted on the same day with both classes of patients, reactions of similar kind and degree were observed in both. In general terms, the syphilitic patients usually showed somewhat larger and better defined reactions, which we ascribed to the increased nonspecific ferment-antiferment cutaneous processes occurring in this disease.

Our results indicate one of two possibilities: Either (*a*) true cutaneous allergy to pallida protein and products does not occur in syphilis and the ordinary luetin reaction is purely a nonspecific physical reaction, or (*b*) some change has occurred in the culture pallida employed in our work and for the manufacture of luetin in general, reducing or removing their allergogenic or anaphylactogenic activities.

That the latter is no idle possibility is indicated by the recent report of Alderson,[3] who has compared the results obtained with luetins made at present by different commercial firms with those observed some years ago after luetin was first prepared by Noguchi. Owing to the frequency of negative reactions among syphilitic subjects, Alderson has concluded that the luetin available at present may be inert, and wisely cautions against its use for diagnostic purposes.

In view of the fact that allergic reactions in tuberculosis and some other bacterial and mycotic infections may be elicited by preparations of organisms long in artificial cultivation, it would appear improbable that *Spirochaeta pallida* could lose to such a large extent in allergogenic qualities. Future investigations conducted with freshly isolated pallida must be awaited to settle the question; but with the culture pallida not available, our results indicate either that true and specific cutaneous allergy to pallida does not develop in syphilis at all, or but to a slight degree, or that the culture pallida has actually lost in allergogenic activity, as indicated by the work of Alderson.

We may also mention in this communication that intracutaneous injections of glycerin bouillon employed in the preparation of old tuberculin, and of maltose bouillon employed in the preparation of trichophytin, are all capable of eliciting the nonspecific physical (ferment - antiferment) or adsorption reactions described by Stokes and others for agar and ascites agar, providing sufficient amounts are injected. The administration of potassium iodid greatly increases the severity of the reactions to all of these, as originally discovered by Sherrick in relation to the luetin reaction, and confirmed by Kolmer, Matsunami and Broadwell and others.

Fig. 2.—*A*, reactions on the right arm of a tertiary syphilitic patient, with a ++++ Wassermann reaction after the intracutaneous injection of 0.1 c.c. of undiluted luetin and 1:2, 1:4, 1:8 and 1:16 dilutions (above downward); *B*, results on left arm of similar injections of the control fluid of ascites agar; no differences in the kind or extent of the reactions engendered by the luetin and its control.

With the single exception of tuberculin, all intracutaneous tests should be accompanied by a control unless the menstruum is plain sterile saline solution with not more than 0.3 per cent. preservative. In the interests of the best work, even a control fluid of this kind should be used because of the marked differences of nonspecific sensitiveness of the skins of healthy individuals and especially of those with cutaneous manifestations of disease. When the substance injected intracutaneously contains culture mediums, the necessity for controls of the menstruum alone becomes imperative, and it is very much to be regretted that the control fluid for luetin was dropped so many years ago.

With tuberculin, the maximum amount injected intracutaneously in human beings for diagnostic purposes is seldom greater than 0.1 c.c. of a 1:100 dilution (0.001 c.c. of tuberculin) which carries such a small amount of the original broth as to render the injection of a control fluid unnecessary. But, if larger amounts of tuberculin were injected intracutaneously for diagnostic purposes, as 0.1 c.c. of 1:10 dilution of tuberculin O. T., a control fluid would be required.

With the exception of tuberculin, we believe, therefore, that all intracutaneous tests for allergic sensitization should be controlled by one of two methods: (*a*) the simultaneous injection of a control fluid capable of eliciting in the same degree the nonspecific reaction, or (*b*) the injection of an amount of the test substance small enough not to elicit nonspecific reactions, this amount being determined by a sufficient number of actual tests on healthy control subjects. Without doubt, the intracutaneous test for allergic sensitiveness is more sensitive than the cutaneous, but its value in diagnostic tests for food, pollen, bacterial and other kinds of sensitiveness is greatly impaired unless the possibility of nonspecific reactions is kept in mind and adequately controlled.

CONCLUSIONS

1. The intracutaneous injection of syphilitic subjects with 0.1 c.c. of serial dilutions of luetin and a control fluid of ascites agar yielded reactions of the same kind and degree.

2. The intracutaneous injection of a pure luetin or vaccine of washed *Spirochaeta pallida* suspended in saline solution did not yield specific allergic reactions. The reactions occurring among syphilitic subjects were sometimes slightly larger and better defined than those occurring in healthy subjects, but the differences were slight and of no diagnostic significance.

3. The reactions occurring among syphilitic patients following the intracutaneous injection of old luetin, the

3. Alderson, H. E.: Value of Tests with Commercial Luetin, Arch. Dermat. & Syph. 5: 610 (May) 1922.

control fluid and new luetin or vaccine of *Spirochaeta pallida*, were ascribed to nonspecific and physical processes of antiferment adsorption.

4. In syphilis, nonspecific cutaneous sensitiveness is enhanced by some unknown mechanism, so that the intracutaneous injection of different substances is capable of engendering nonspecific reactions of greater extent than occurs in nonsyphilitic individuals.

5. The results of the present investigation indicate either (*a*) that true specific cutaneous allergy does not occur in syphilis or (*b*) that the cultures pallida employed have lost completely, or nearly so, in allergogenic or anaphylactogenic properties.

6. In conducting intracutaneous tests, a control fluid should always be included, capable of engendering the same nonspecific reactions, or the amount injected must be small enough on the basis of actual tests not to elicit nonspecific reactions. These precautions are particularly necessary for intracutaneous tests among syphilitic patients, or in subjects with other diseases accompanied by enhanced nonallergic cutaneous sensitiveness.

THYROIDECTOMY *

A MODIFIED TECHNIC †

C. A. ROEDER, M.D.
OMAHA

Following the operation of resection of the thyroid gland for goiter, the undesirable technical results, although of relatively minor importance, not infrequently cause no little annoyance to the patient, and

Fig. 1.—Reflected flap composed of skin, fat, platysma muscle and deep cervical fascia, which uncovers and mobilizes the sternohyoid and sternothyroid muscles covering the thyroid gland.

distract thereby, through criticism or apprehension, many other goiter patients from surgical treatment when they are in the greatest need of it. We too often see: (1) a brawny induration beneath the flap; (2) a more or less conspicuous and tender nodule where the anterior muscles, sternohyoid and sternothyroid, were reunited after their transverse division for additional exposure; (3) an annoying adhesion between the trachea and the skin at the point of drainage, which also produces, here, a widening of the scar; and (4) an abnormal deepening of the suprasternal notch, due to

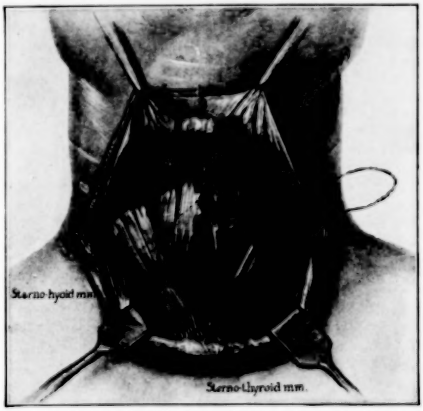

Fig. 2.—With or without drainage, the separated sternohyoid and sternothyroid muscles are completely united in two layers, entirely covering the trachea.

a loss of the thyroid isthmus and retraction of the skin by the adhered trachea.

I here present a modification in technic, which has not only overcome to a marked degree these postoperative technical results, but has, in addition, with certain types of goiter given an easier and more rapid exposure of the gland.

EXPOSURE OF THE GLAND

The collar incision of Kocher, as originated and generally practiced today, extends down to the deep cervical fascia, making a flap of skin, fat and platysma muscle.

This type of flap, which leaves the sternohyoid and sternothyroid muscles immobilized by their covering of deep cervical fascia, is most applicable to all large goiters, in which a transverse division of the sternohyoid and sternothyroid muscles covering the gland is always necessary for exposure, and also to all small goiters in which only a moderate amount of retraction is necessary. The most frequent type of goiter operated on, however, is the one of medium size, in which midline separation of the anterior muscles and their fascial covering allows generally not sufficient exposure of the gland without a transverse division of these muscles.

With this type of goiter I extend the collar incision through the deep cervical fascia, and after ligating the anterior jugular veins, reflect the fascia as the inferior layer of the flap. This liberates the sternohyoid muscles to the extent that, with only occasional exceptions, they can be retracted sufficiently to allow all the exposure desired without their transverse division (Fig. 1).

* Thyroidectomy, removal of a portion of the gland.

† From the Department of Surgery, University of Nebraska College of Medicine.

With these anterior muscles not cross-sectioned, we do away with the frequently persisting and tender nodule where they were reunited, which in addition allows a more rapid return of normal flexion and extension of the neck. The brawny induration so often seen beneath the flap composed of skin, fat and platysma muscle only, and due to the muscle adhering to the deep fascia, is prevented to a great extent by reflecting this deep fascia, the reunion of which to the muscles beneath results in very little, if any, noticeable induration.

DRAINAGE

With an increasing experience in goiter surgery, I am draining a smaller percentage of all cases. I have practically ceased draining all resected exophthalmic goiters with a toxicity of one on a scale of four, with excellent results. I fully believe in the other extreme, in very toxic exophthalmic goiter cases, of leaving the wound wide open, which I first saw the late Alexander Hugh Ferguson practice twelve years ago, and advocated at present, with greatly improved technic, by Crile.

Drainage, as generally practiced today, is through the midline, directly over the trachea; this prevents a complete reunion of the muscles and fascia, which allows in too many instances the adhesion between the trachea and the skin. This adhesion produces also the abnormal and conspicuous deepening of the suprasternal notch, particularly when the thyroid isthmus has been removed, which removal is generally necessary. Furthermore, the platysma muscle is absent in the midline, and the drainage tube therefore comes through the thinnest portion of the flap, resulting in a widening of the scar at this point.

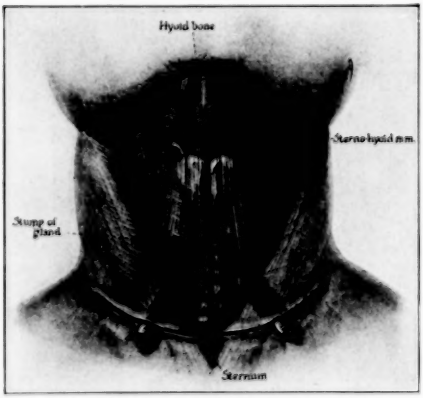

Fig. 3.—Lateral drainage with the muscles completely covering the trachea: The drainage tubes are brought through stab wounds in the anterior muscles and out through the incision lateral to the suprasternal notch.

For several years I have placed, lateral to the midline and trachea, one drain for each side of the gland operated on; the rubber tube passing through a stab wound in the sternohyoid and sternothyroid muscles and directly out through the line of incision, thereby entirely avoiding the midline of the neck, the trachea and the suprasternal notch (Fig. 3). The inner borders of the muscles are completely united in two layers over the trachea, which keeps the latter entirely away from the skin: the line of incision is firmly closed in the thinnest portion of the flap, which not only prevents the conspicuous widening of the scar at this point, but also serves partly in leaving a more normally appearing suprasternal notch.

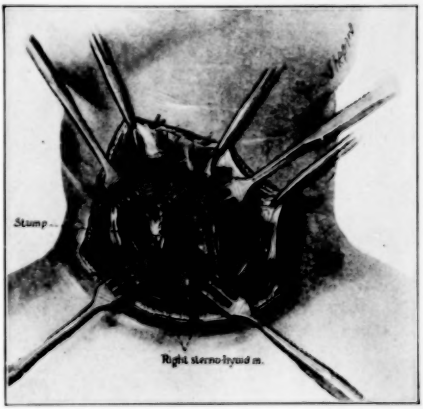

Fig. 4.—The three-quarter incision on the right side, with the deep fascia reflected in the flap, and the sternohyoid and sternothyroid muscles split in their midline lateral to the trachea; this procedure exposes only one lobe.

THREE-QUARTER INCISION

The inferior thyroid artery may be ligated through a 2 inch incision, in direct line with the full collar incision to be used later in a resection of a hyperplastic gland (exophthalmic goiter). Frequently after making this small incision, in anticipation of ligating only one inferior artery after unsatisfactory superior pole ligations, I found the corresponding lobe so well exposed by a slight extension of this incision that I could easily resect this portion of the gland if the patient was withstanding the anticipated ligation better than expected. About six years ago this experience led me to adopt, with no little satisfaction, what I term the three-quarter incision for every operation in which it represented the first or second step in a two or more stage operation of bilateral lobe resection for exophthalmic goiter.

In the severe types of exophthalmic goiter there is no need of making an incision and a flap large enough on both sides to expose the entire gland, when only one lobe dare be operated on. Here I make the three-quarter collar incision through the deep fascia, full length on the side of the gland to be operated on and one-half the length or less on the opposite side; i. e., three-quarters the length of an incision necessary to expose the entire gland. After the deep cervical fascia is reflected with the flap, the anterior muscles directly over the lobe to be resected are easily split lengthwise, resulting always in an ample and rapid exposure (Figs. 4 and 5).

Draining these unilateral resections through the center of the three-quarter incision, away from the

trachea and suprasternal notch, has never caused an increase in scar formation at this point in the line of incision. This has led me to substitute lateral for midline drainage in all goiter operations when drainage was deemed necessary. The final results of single and

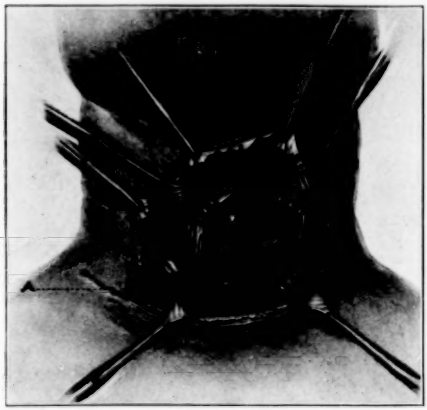

Fig. 5.—The three-quarter incision on the left side. Note the scar, *A*, from the previous three-quarter incision on the right side.

multiple resections, with lateral drainage, with or without the three-quarter incision, always presented a better looking neck than when the drainage tube was brought out through the suprasternal notch directly over the trachea.

834 Brandeis Theater Building.

THREE CASES OF ACUTE ENCEPHALITIS TREATED WITH SPECIFIC SERUM *

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AND
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ROCHESTER, MINN.

Ever since the pandemic of influenza, an unusually large series of cases of encephalitis has been observed. With each succeeding year the number of cases has gradually decreased; but if our experience is any criterion, there is still an excess of encephalitis over and above that previous to the pandemic.

Our clinical material during the past year has consisted in large measure of the sequels and chronic residues of encephalitis, but we have also observed a number of acute cases, in three of which we used lumbar drainage and the usual symptomatic treatment, with a specific serum recently prepared by one of us (E. C. R.). This serum was obtained from a horse repeatedly injected with a streptococcus isolated from a patient suffering from typical encephalitis.

* Read before the American Pediatric Society, Washington, D. C., May, 1922.

* From the Section on Pediatrics and the Division of Experimental Bacteriology, the Mayo Foundation.

REPORT OF CASES

Case 1.—B., a girl, aged 5 years, became ill, Dec. 15, 1921. She weighed at birth 7¾ pounds (3.5 kg.); she had been breast fed. At the age of 6 months she had severe pyelitis, with remissions and exacerbations until the tonsils and adenoids were removed in August, 1921.

Physical examination was negative. The child was pale and listless, and did not feel well. December 24, she refused her meals and was very apathetic. The next day her temperature was 100.4; she was nauseated and rather excitable, and slept more than usual. An enema, a cathartic and a mustard bath were given, December 26, but she slept eighteen of the twenty-four hours. The excitability gradually increased until Jan. 1, 1922. She laughed, cried or giggled, and moved around constantly. The leukocyte count was 9,000. January 5, restlessness became very marked, and abdominal pain developed; the leukocyte count was 24,000. Appendicitis was suspected, but no evidence of it found. The leukocytes at two-day intervals numbered 18,000 and 10,000.

January 10, because of extreme irritability, stupor and slight twitching of the extremities, a lumbar puncture was made, and 25 c.c. of fluid obtained under pressure. There were 18 cells to the cubic millimeter; no coagulum formed. The puncture relieved the child's irritability immediately; her mind became clear, and she had better control of muscular movements. January 12, her condition gradually returned to what it had been before puncture, but with more marked choreiform movements. No Kernig or Brudzinski signs were present. The eyegrounds were negative, as were the tuberculin tests.

January 14, a second lumbar puncture was made, and 65 c.c. was obtained under considerable pressure. The fluid contained 50 cells to the cubic millimeter. No tuberculosis bacilli were found. After the withdrawal of fluid there was again a decided improvement, followed by a rapid return of the choreiform movements. When the child was seen, January 17, she was in a state of constant activity, moving

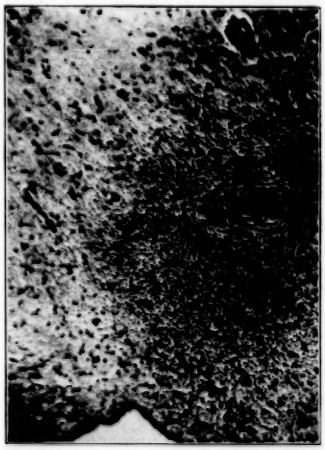

Fig. 1.—Perivascular and localized round-cell infiltration in the pons near the ventricle in rabbit; hematoxylin and eosin, × 1,000.

around in her bed and having choreiform movements of her extremities, head, neck and trunk. Her sensorium seemed clear, and physical examination revealed nothing except a slight redness of the nose and throat and a general exaggeration of the reflexes. Swabs were taken from the throat and nasopharynx.

On the afternoon of January 17, after a preliminary desensitization injection of 1 c.c. of serum, 5 c.c. of the encephalitis serum was given. January 18 and 19, 10 and 15 c.c., respectively, were given. After the second injection the child was very much improved, and after the third the nervous manifestations entirely disappeared. The clinical picture of constant motion and choreiform movements completely changed, and she became quiet, lay in her bed, and played with her toys. The choreic movements never returned, and the reflexes became normal. On the third day after the serum was given, the mental and nervous symptoms had all disappeared.

January 24, after two days of increase of temperature (102), the child developed widespread urticaria. After February 12, her temperature became normal. She was up for two hours in the morning and two hours in the afternoon, slept soundly through the night, rested in the afternoon, and seemed perfectly well. April 10, she was still being carefully watched and had had no nervous irritability or choreiform movements. Whether there are any further manifestations must be left to the future.

The swab from the nose was stabbed into plain agar and brought to the laboratory. From this, glucose-brain broth was inoculated and the twenty-four hour culture, which contained a great many colonies of indifferent and green-producing streptococci and a few staphylococci on plating, was injected intracerebrally into rabbits. The organism isolated from the nose was agglutinated by the specific serum. One rabbit received 0.2 c.c., and one 0.1 c.c. of the undiluted culture, one 0.1 c.c. of a 1:10 dilution, and one 0.1 c.c. of a 1:1,000 dilution in salt solution. The first three animals were found dead the following morning. The one receiving the smallest dose had become tremulous and weak in its hind extremities, and had developed marked choreiform movements of the head. These symptoms continued and grew worse until the second day, when the animal died. Marked congestion of the vessels of the pia over the cerebrum, and edema of the pia over the cerebellum were found at necropsy. Cultures from the brain yielded a pure culture of indifferent streptococci; the blood proved sterile. On the basis of the striking train of symptoms noted in this animal, two additional rabbits were injected with 0.1 c.c. of a 1:1,000 dilution of the forty-eight hour glucose-brain-broth culture. They developed almost identical symptoms, as follows:

A rabbit, weighing 1,910 gm., was injected intracerebrally, January 21. January 22 the animal was slightly tremulous, but otherwise well. January 23, respirations were increased, expirations were rapid, almost explosive, and tremor was more marked. The animal was hyperesthetic; it became tremulous and ataxic when hopping, which it was disinclined to do. January 24, the tremor and ataxia were still present, and as the animal hopped it threw its head irregularly. January 25 and 26, the condition remained practically unchanged, and the animal was chloroformed and examined at once. There were no gross lesions in the brain or the cord. The blood was sterile. Culture from the brain on a blood-agar plate yielded a few colonies of indifferent streptococci, and glucose-brain-broth culture yielded a granular growth of the same organism.

Sections of the brain and cord of this rabbit, as of the one injected in the same way which developed identical symptoms, showed moderate mononuclear infiltration of the pia around the blood vessels, rather extensive perivascular round-cell infiltration, which was most marked in the pons (Fig. 1) and upper portion of the medulla, areas of localized infiltration in the brain substance independent of the vessels, and moderate neurophagocytosis in the basal ganglions.

Sections of the brains of the animals that died soon after injection showed moderate infiltration of the meninges, perivascular spaces and adjacent brain substance by leukocytes and round cells in varying proportions, depending on the duration of the experiment.

CASE 2.—F. P., a boy, aged 10 years, had had measles and pertussis, and his tonsils had been removed six months before. His past history was otherwise negative. He had become acutely ill, Jan. 24, 1922, with almost continuous movements of the face and trunk. He lay in a state of semicoma, breathing noisily; his mouth filled with mucus.

Examination revealed weak abdominal muscles, normal reflexes, and pupils reacting to light. His temperature was from 101 to 102. Twenty cubic centimeters of clear spinal fluid was removed; the cell count was 4. January 25, the eyes showed an early choked disk. The child seemed a little brighter for a short time after puncture, but stupor continued. January 27, the temperature was 103.5, and the child was definitely worse. Forty cubic centimeters of spinal fluid was removed, and 15 c.c. of serum was given intravenously. The child was somewhat brighter the next day, and movements had decreased. The temperature remained 103. Eight cubic centimeters of encephalitis serum was given intravenously. January 29, 40 c.c. of spinal fluid was removed. The temperature was 103; the general condition was about the same. January 30, the child seemed definitely brighter and said a few words for the first time. Seventeen cubic centimeters of serum was given intravenously. January 31, the temperature was practically normal. The patient appeared and acted brighter; choreic movements had practically disappeared, and he was resting quietly. Spinal puncture yielded 30 c.c. of fluid containing 14 cells. Twenty cubic centimeters

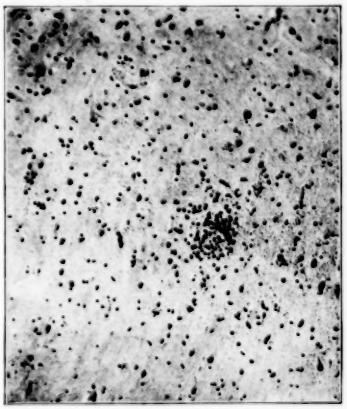

Fig. 2.—Area of leukocytic and round-cell infiltration in the pons of rabbit two days after intracerebral injection with the tonsil strain, after one animal passage; hematoxylin and eosin, × 100.

of serum was given. February 1, the general condition was good, and the mind clear. The nervous symptoms had practically disappeared except for occasional grimaces.

February 3, the child's temperature rose to 105; he had a right-sided parotitis, but was otherwise apparently well. February 7, the abscess opened in the right parotid gland. A staphylococcus culture was obtained from the pus. February 12, the temperature remained high. Blood culture yielded staphylococci. The child was very sick; he did not have nervous symptoms, but complained of pain in his legs. February 16, the temperature was normal for the first time.

February 22, the temperature was 102, and pain developed in the arm, knee and toes on the left side. February 24, the temperature was 103. The left ear was discharging, and the left axillary glands were swollen. Blood culture was negative. A rash appeared over the body. March 3, the joints were still painful, and the boy was unable to flex the left foot and toes. An abscess appeared in the left axillary glands. March 7, the temperature was normal, and the foot and toes could be flexed. April 17, the child was in excellent condition, and had gained 10 pounds (4.5 kg.). He limped slightly with his left leg, and the dorsal flexion of the foot was rather weak.

CASE 3.—F. J., a boy, aged 2½ years, was examined in the clinic, March 19, 1922. On the evening of March 17, the

mother had noticed that the child was rather warm and that he slept restlessly. The next morning he developed general convulsions that recurred at irregular intervals of about one hour. He was semicomatose most of the day, and when seen by the local physician in the evening, he could be aroused only with difficulty; his temperature was 102.6 by axilla. March 19 he had convulsions, recurring at irregular intervals, and could no longer be aroused from his coma. The convulsions were more marked in the right side.

During his examination in the afternoon of March 19, he lay in deep coma. He had a slight stiffness of the neck, his nose and throat were slightly red, and his tonsils were swollen but without exudate. The findings in the chest and abdomen were negative. The Babinski, Brudzinski and Kernig signs were negative.

A lumbar puncture yielded 25 c.c. of clear fluid under increased pressure. The Nonne test was negative. The cell count was 80 questionable (because of acid). The following morning only one cell was found. No change in his condition followed the puncture. He entered the hospital at 10 p. m., March 19. His temperature was 105, pulse 140, and respiration 34. The erythrocytes numbered 3,420,000; the leukocytes, 5,000; the hemoglobin was 67 per cent.; the polymorphonuclears, 67 per cent.; lymphocytes, 38 per cent., and large mononuclears, 6 per cent. A trace of albumin was found in the urine. Convulsions continued during the night. Chloral given at 3 a. m., March 20, controlled the convulsions, but they recurred at 9 a. m. At 10 a. m., 10 c.c. of serum was given intramuscularly. Swabs were taken from the nose and throat. The child seemed drowsy, and slept most of the day. He was rather restless during the night, but convulsions did not return.

March 21, 15 c.c. of serum was given, and lumbar puncture repeated; there were 11 lymphocytes to 1 cubic millimeter. The Nonne test was negative. Culture revealed a green-producing streptococcus. The patient appeared much better, talked intelligently, and asked for food. A divergent squint (present since birth) was very evident. March 22, the temperature was 104, the pulse 130, and the respiration 32. March 25, the child's temperature was normal for the first time, and he seemed entirely recovered. April 10, the home physician reported a single convulsion without fever or other symptoms, but no recurrence since then.

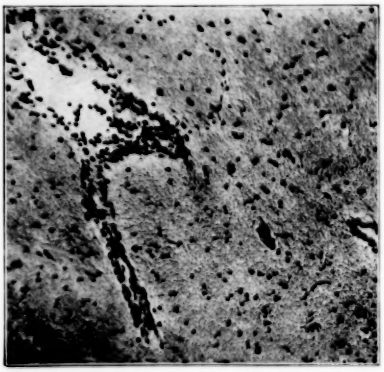

Fig. 3.—Leukocytic and round-cell infiltration of the pia and around blood vessels in the brain of rabbit five days after intracerebral injection with the strain from the spinal fluid; hematoxylin and eosin, × 100.

EXPERIMENTS ON ANIMALS WITH THE ORGANISMS ISOLATED FROM THE TONSILS AND THE SPINAL FLUID

A small amount of pus was expressed from the tonsils, and suspended in 2 c.c. of salt solution. Two rabbits were injected intracerebally, one with 0.2 c.c. of the suspension, and the other with 0.2 c.c. of a 1:100 dilution.

The first rabbit was found dead the next morning; the vessels of the meninges were markedly congested, and there was a hemorrhage at the point of injection in the right frontal lobe.

The second rabbit, weighing 1,170 gm., was injected intracerebrally, March 20, with 0.2 c.c. of a 1:100 dilution of the salt solution suspension of the pus from the tonsils. March 21, at 7 a. m., the animal appeared well. At 2 p. m., its respirations were somewhat increased and it was decidedly tremulous. At 2:30 p. m., it developed peculiar attacks of tonic spasms of the muscles of the fore extremities, head and neck, in which it usually turned its head rather sharply to the right, and sometimes sharply downward. The attacks recurred at intervals of from two to five minutes. In some of the more severe attacks the animal extended its fore extremities in a stiff manner, raising the forepart of its body almost to the point of falling over backward, and holding its head rigid. It drooled saliva. At 2:45 p. m., the tonic spasms of the muscles of the forepart of the body continued. Between attacks the animal appeared half asleep, and rested its head on the floor. At 2:50 p. m., during an attack, it suddenly plunged forward for a short distance, fell to its side, kicked violently with fore and hind extremities, urinated, held its breath, and seemed to be dying. Respirations then returned slowly, and it lay quietly on its side. Repeated tonic contractions of the right fore and hind extremities, head and neck followed. At 3:10 p. m., it had another convulsive attack. From 3:15 to 3:25, the attacks recurred frequently; in the intervals, the animal was semicomatose, and at the end of each attack it turned its right eye sharply forward and inward, holding its head very stiff. At 3:30 the attacks continued, but were less severe. The animal was growing weaker, and the respirations were feeble. At 3:40 p. m., it died without a struggle. The animal was examined at once.

The vessels of the meninges were extremely congested, but there were no hemorrhages in the brain or the cord; the cerebrospinal fluid was slightly turbid; the stomach was tightly contracted over a large amount of contents, and the mucous membrane contained numerous linear hemorrhages. There was no mark at the point of inoculation. Cultures from the blood and the brain yielded a large number of green-producing streptococci.

A mixture of equal parts of the primary (twenty-four hour) and secondary (ten hour) cultures of the suspension of pus from the tonsils was injected intracerebrally into two rabbits, one receiving 0.1 c.c., the other 0.2 c.c., of a 1:1,000 dilution of the neutralized culture.

The first rabbit was extremely shaky and tremulous, and had several attacks of slight but universal spasms. It was found dead the second day.

The second rabbit, weighing 1,610 gm., was injected intracerebrally, March 21, 1922, with 0.2 c.c. of a 1:1,000 dilution of equal parts of primary and secondary glucose-brain-broth culture from the tonsils. March 22, the animal sat quietly, rather humped up, and was disinclined to hop. It was slightly hyperesthetic, and the respirations were slightly increased. At noon the next day it had repeated spells of quivering of the muscles of the neck on the left side, hopped slowly, and was a bit shaky. At 7:30 a. m., March 24, the animal was found sitting in a corner of the cage having repeated spells of clonic spasms of the muscles of the left side of the neck and the left shoulder. At 8:30 a. m., the attacks had grown worse; the spasms of the muscles had become continuous; the head was held downward and to the left; the muscles of the fore extremities twitched repeatedly, as the body was raised high. At 9 p. m., the spasms of the muscles of the forepart of the body still continued. When the animal was prodded, general tonic spasms of the muscles developed, first on the left side and then on both sides. In one of these the animal fell on its side, relaxed, gasped for breath, had a recurrence of the spasms involving the muscles of almost the entire body, more marked on the left side, and died, apparently from cardiac failure. It was examined at once.

The vessels of the meninges were markedly congested, but there were no hemorrhages in the brain or the cord, and

there was no mark at the point of inoculation. Cultures from the brain and blood yielded a pure growth of the green-producing streptococcus. The spinal fluid in tall tubes of ascites meat infusion and meat infusion yielded a pure culture of a pleomorphic short-chained streptococcus. When a week old, this culture was transferred to glucose-brain broth, and the twelve hour growth in this medium was inoculated into two rabbits, one receiving 0.1 c.c., the other 0.1 c.c. of a 1:1,000 dilution. The findings in the two rabbits were almost identical. Those of the first are sufficiently illustrative.

A rabbit, weighing 2,000 gm., was injected intracerebrally, April 2, 1922, with 0.1 c.c. of a glucose-brain-broth culture of the streptococcus from the spinal fluid in the second culture generation. April 3, at 10 p. m., the respirations were somewhat increased, but the animal did not have spasms. April 4, at 7 a. m., the respirations were greatly increased. The animal was restless and uncomfortable, and when made to hop became markedly tremulous, and the muscles over most of the body twitched; at times this almost amounted to a universal clonic spasm. At noon the condition was about the same. Spasms of the extremities and of the muscles of the back were repeated rapidly. At 6 p. m., the condition was unchanged. April 5, at 8 a. m., the respirations were still markedly increased. The animal was hyperesthetic and excitable, and had repeated attacks of general twitchings of the muscles, especially those of the fore extremities. When it was forced to hop, the spasms extended to the hind extremities, became quite violent, and threw it around. At 10:15 it was found lying on its side with continuous tremor and twitchings of the masseter muscles, and the muscles of the neck, shoulder, back and fore extremities; at intervals it had clonic twitchings of the hind extremities. These increased greatly on prodding. A little later the animal died, and was examined at once.

The vessels of the meninges were moderately congested; the spinal fluid was slightly turbid; there were no gross lesions at the point of injection, none in the brain or the cord elsewhere, and none in the viscera. The blood was sterile, and cultures from the brain yielded a pure growth of the organism injected.

Sections of the brain and cord of this rabbit showed a variable degree of leukocytic and round-cell infiltration of the meninges, perivascular spaces, and substance of the brain and pons remote from the blood vessels. The proportion of leukocytes and round cells varied with the duration of the experiment. The character of the lesions found in the animals injected with the strain from the nasopharynx and in those injected with the strain isolated from the spinal fluid was identical (Figs. 2 and 3).

On account of the striking improvement in the patient following the injection of the encephalitis serum, a protection experiment with this serum was made in rabbits. Six rabbits of approximately the same weight were selected and divided into three groups of two each. All were injected intracerebrally twice, twenty-four hours apart, with 0.1 c.c. of a 1:1,000 dilution of the glucose-brain-broth culture of the streptococcus isolated from the rabbits injected with the salt solution suspension of the pus from the tonsils. The serum was given to four of the rabbits, two receiving it at the time of each injection of the bacteria, two the day before the injection and also at the time of each injection. The two that were not given the serum were found dead the morning after the second injection. One of the two given simultaneous intravenous injections of 1 c.c. of the serum died late on the second day, the other on the fourth day after the second injection. One of the two given 1 c.c. of the serum intravenously the day before and 1 c.c. with each injection of the culture died on the fifth day, and the other survived. The latter remained well until the third day, when it developed a peculiar motion of the head, throwing it from side to side and occasionally backward. These movements, which were always worse when the animal hopped and when it was prodded, gradually grew less, but were still noticeable three weeks later when it was chloroformed. Cultures from the brain and the cord were negative.

COMMENT

The effect of the injection of serum in all three cases was so striking that it seemed advisable to report this small group, with the hope of interesting others in the specific treatment of encephalitis, in order to determine whether the same excellent results can be obtained in a larger series of cases. The experience of any one man with acute encephalitis is rather limited, but the number of cases is large in the aggregate, and we are anxious that the serum shall be tried out in a larger number of cases. It is available to all who are interested in using it.

We do not claim at present that the specific serum was the curative factor in these cases. With the injection of the serum, however, there was a decided improvement in the patients' general condition and a complete clearing up of the nervous symptoms of encephalitis. Furthermore, we know that the serum protects animals against disease following intracerebral injections of the streptococcus, which is not the case with normal horse serum.

THE PHARMACOLOGY OF MERCURY

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A considerable volume of information has been accumulated on the behavior of mercury in the body. Valuable contributions to the pathologic changes produced in the liver, kidney and other organs have also been made by cases of poisoning in man and by experimental studies on animals. Very few reports, however, have appeared on the pharmacologic action of mercury. Dreser[1] studied the action of various compounds of mercury on the isolated heart. More recently Mueller, Schoeler and Schrauth[2] reported experiments on the effects of several organic preparations on the circulation and respiration in cats in which injection was made intravenously.

During the past year Kleitman and I carried out experiments with compounds of mercury on different animals and on the isolated heart of the frog and turtle. We have also studied the effect of different substances on the action of mercury, giving some attention to its absorption from the small intestine and when given by intramuscular injection. The results that we obtained showed that small quantities of mercury given intravenously in the form of the succinate, benzoate or acetate produced very severe disturbance of the circulation in all animals, though the effects were not exactly the same in each case. Some differences in reactions were observed in cats, dogs and rabbits. The injection of from 2 to 4 mg. of mercury in divided doses produced a sudden fall of blood pressure, which often occurred after a long latent period (one or two minutes). Blood pressure sometimes fell to zero. The heart stopped at the same time, but arrest of cardiac action was not permanent after doses of 2, 4 or even 6 mg. of mercury. The inhibition of the heart lasted for periods varying from one-half minute to three minutes. Blood pressure then rose suddenly, sometimes reaching a height of 160 mm.

1. Dreser: Arch. f. Exper. Path. u. Pharmakol. **32**: 456, 1893.
2. Mueller, Schoeler and Schrauth: Biochem. Ztschr. **33**: 381, 1911.

of mercury, or even more. Since this rise of blood pressure may be ascribed to asphyxia on account of the associated suspended respiration, when the heart stopped, this was controlled by other substances that likewise caused suspension of respiration and arrest of heart action. But no sudden rise of blood pressure occurred on recovery. We performed a number of experiments with acetone in this laboratory, but in no case was the suspension of heart action and respiration followed by an abrupt rise of blood pressure.

This striking resemblance to cardiac inhibition produced by stimulating the vagus nerve suggested the advisability of testing the action of mercury when the vagus mechanism was either partly or entirely eliminated. The administration of the mercury salts after double vagotomy or after paralysis of the vagus endings in the heart by atropin produced exactly the same effects as when the vagus mechanism was intact. As previously mentioned, the response varied in different animals. Dogs were found to be much more sensitive to mercury than cats. Paralysis of the circulation and of respiration occurred in one experiment on a dog after the injection of 2.3 mg. of mercury (as succinate) per kilogram. Nor were the other symptoms of circulatory disturbance and of cardiac irregularity observed in dogs the same as in cats. The reaction of the rabbit to mercury was qualitatively the same as that of dogs, but our experiments indicated that rabbits could tolerate larger amounts of mercury than dogs.

Particularly interesting were the results we obtained in experiments with mercurochrome—220 soluble. This compound is the disodium salt of dibromoxymercury fluorescein, and was first prepared by Young, White and Swartz,[3] who reported that it was a substance of very low toxicity. Dogs tolerated 10 mg. of mercury for each kilogram by intravenous injections

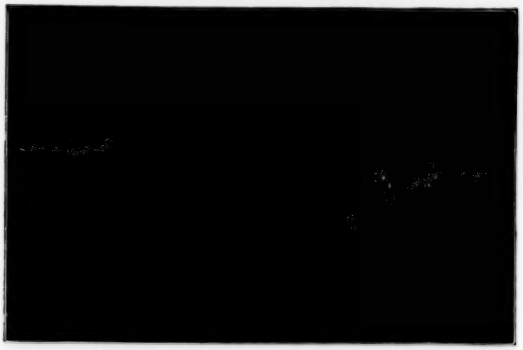

Fig. 1.—A cat, weighing 2.6 kg., under urethane anesthesia, was given 13 c.c. of mercuric succinate (2.6 mg. of mercury) at each of three injections. There was sudden fall of blood pressure after the third injection, arrest of heart action and recovery. Respiration stopped, but also recovered. Upper tracing, respiration; lower tracing, blood pressure; time in seconds.

when it was in the form of mercurochrome, but rabbits were less resistant to this compound. We studied the effects of mercurochrome on the circulation and respiration by intravenous injections given to cats and dogs under urethane and chlorbutanol anesthesia, respectively. The results obtained showed that its action was in some respects decidedly different from that of other organic compounds of mercury, but that it at the same time retained the characteristic effect of mercury. The smallest fatal dose of mercurochrome given intravenously to cats was 14 mg. of mercury for each kilogram. The first indications of circulatory disturbance occurred after 10 mg. of mercury for each kilogram, which is about two or three times the fatal dose of mercury in the form of acetate, succinate or benzoate. Much larger doses of mercury as mercurochrome were tolerated in the other experiments, one of which will be reported for illustration.

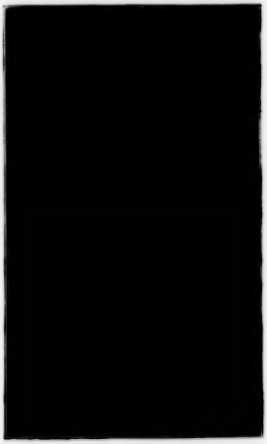

Fig. 2.—A cat, weighing 2 kg., under urethane anesthesia, was given, as Injection 18, mercurochrome-220 soluble. Previously, 42 mg. of mercury had been injected. There was fall of blood pressure; respiration slightly slowed; time, four seconds.

A full grown cat under urethane anesthesia received intravenously four injections of 4 gm. of mercury each in twenty-six minutes. There was a slight fall of blood pressure, with cardiac irregularity, which lasted about half a minute. Sixteen minutes later another injection produced a much greater effect, though only half of the preceding amount was used. Heart action was slowed considerably, and blood pressure fell 30 mm. of mercury. The effect lasted only about one minute. During the next forty minutes, 12 mg. of mercury was injected in divided doses. Each injection was followed by cardiac irregularity indicating heart block, but recovery occurred in every case. The administration of the mercury dye was continued. When the total amount injected was 25 mg. of mercury for each kilogram, the blood pressure fell promptly, reaching almost to zero, and heart action ceased. This lasted about one and a half minutes, when blood pressure rose abruptly, attaining almost the same level as before the injection. The pulse was slow at first, but within a few minutes, heart action suddenly became rapid, the acceleration lasting until the next attack. Respiration, which was slowed during the period of cardiac inhibition, stopped when the heart recovered. Though it returned after two minutes, respiration remained permanently slower than before the circulatory changes described set in.

The cardiac effects observed in intact animals were also observed in experiments on the isolated heart of cold blooded animals. The frog heart and the turtle heart were perfused with Ringer's solution containing different amounts of mercury. Tests were made with

3. Young, H. H.; White, E. C., and Swartz, E. O.: A New Germicide for Use in the Genito-Urinary Tract, J. A. M. A. 73: 1483 (Nov. 15) 1919.

succinate, benzoate and acetate, but we also studied the action of mercuric chlorid. Surprisingly small amounts of these salts proved to be very injurious to the heart. We could reproduce the same phenomena in the heart of the cold blooded animals as we observed in warm blooded animals. Mercury in a concentration of 1:100,000 in Ringer's solution usually produced heart block and delirium cordis in the turtle heart, when perfused for very brief periods. So marked was the toxicity of mercury that delirium cordis sometimes occurred when the turtle heart was perfused with concentrations of mercury of 1:1,000,000 or even 1:10,000,000. The frog heart was more resistant, but the action of mercury also proved to be very powerful on the hearts of these animals. Particularly interesting is the observation we made that the heart may be permanently damaged by mercury, for little or no improvement occurred in the heart of the frog when perfusion with the salts of mercury was discontinued. In the turtle heart some improvement was observed, but complete recovery never occurred after mercury.

Experiments were also made on the influence of mercury on peristalsis. The movements of the intestine in situ as well as the isolated intestine of different animals were studied. Intravenous injections of mercuric compounds failed to produce any effect on peristalsis. The reaction of isolated segments of intestine was not constant. Considerable improvement of the rhythmic contractions, and especially stimulation of tonus, was observed in some experiments. No response or relaxation of the intestine occurred in several others. As these studies are still in progress, no definite conclusions can be drawn at present. It is evident, however, that the reaction of smooth muscle to mercury is quite different from that of the heart.

Fig. 3.—A dog, weighing 6.36 kg., under chlorbutanol anesthesia, was given, as Injection 5, 13 mg. of mercurochrome-220 soluble intravenously, which produced heart block, delirium cordis, and finally cardiac paralysis. (Mercurochrome had previously been injected, 8 mg. of mercury for each kilogram). Upper tracing, myocardiogram; lower tracing, blood pressure; time, four seconds.

Cardiac muscle is unquestionably very sensitive to mercury, while the effect of the metal on smooth muscle is at best not considerable. Of interest also from a practical and clinical standpoint is the absorption of compounds of mercury. Observations were therefore made on absorption when given by intramuscular injection or when solutions of the salts were

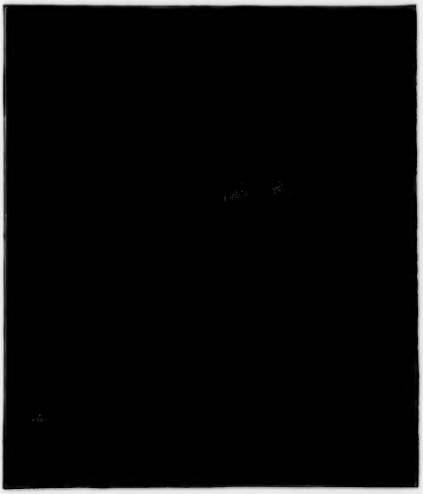

Fig. 4.—A cat, weighing 3 kg., under urethane anesthesia, was injected intravenously with 3 c.c. of 3 per cent. sodium citrate. Ten minutes later, 2 mg. of mercury per kilogram (as succinate), intravenously, stimulated respiration. Upper tracing, respiration; lower tracing, blood pressure; time in seconds.

introduced into the duodenum. When injected into the gluteal muscles there was definite indication that absorption of appreciable amounts occurred within twenty-six minutes. The symptoms produced corresponded to those observed when 4 or 5 mg. of mercury for each kilogram was injected intravenously. Exceptionally, however, the characteristic effects of the metal appeared much later. In one experiment, evidence of absorption was first obtained one hour and forty-five minutes after injection into the muscles.

When mercury was introduced into the small intestine, symptoms appeared much sooner than when given intramuscularly. A fall of blood pressure of 20 mm. of mercury occurred seventeen minutes after the injection of 10 mg. of mercury in the form of the succinate into the small intestine. During the next hour there was a further fall of 70 mm. In another experiment, heart block occurred within ten minutes. As in the case of intramuscular injections, the rate of absorption differed in various animals, the characteristic effects being delayed sometimes about two hours. It may be safely concluded, therefore, that the rate of absorption of organic compounds of mercury from the intestine is fully as good as, if not better than, from the muscles.

Attention may also be called to the observation we made on the effect of various substances on the behavior of mercury in the body. That the action of drugs may be modified by various conditions has often been pointed out by a number of investigators. Indeed, examples of complete reversal of action are by no

means rare. The action of mercury in citrated animals shows that respiration may be considerably stimulated by mercury. When dilute solutions of salts of the metal were injected intravenously into animals after the effect of citrate had worn off, respiration became much more frequent and deeper. The effect in most cases lasted about three minutes, but in one experiment the duration of the effect was about a quarter of an hour. It should be added, in this connection, that the effect of mercury on respiration was independent of the condition of the circulation and that mercury not preceded by citrate never stimulated respiration. However, when considerable amounts of citrate were injected, the subsequent administration of mercury failed to stimulate respiration. Furthermore, we found that large amounts of citrate produced well marked decrease of tolerance to mercury. That mercury may modify reactions to drugs was shown in experiments we carried out with barium and mercury on the isolated heart. We found that when the heart was perfused with barium chlorid in Ringer's solution, after previous treatment with mercury, depression instead of stimulation occurred.

Finally, it may be stated that the action of mercury may be modified also by epinephrin. It was found in several experiments that the onset of delirium cordis and heart block produced by mercury was hastened by the injection of epinephrin.

SUMMARY

In brief, mercury is highly toxic to the heart, causing various cardiac irregularities, such as heart block, delirium cordis and finally paralysis. It is also toxic to the respiration, but the effect in this case is not nearly so pronounced as on the circulation. Furthermore, the action of mercuric salts may be greatly increased by citrate or by epinephrin, suggesting that under certain conditions associated with disturbances of metabolism the toxicity of mercury may be still more increased.

To Remove Rust from Instruments.—First place the instruments in a saturated solution of stannous chlorid, which causes the spots to disappear by reduction. Then rinse the instruments with water and place them in a hot solution of soda soap, and dry. It is also desirable to rub them with a little absolute alcohol and prepared chalk. Another method to remove rust is to place the instruments in kerosene. Paraffin oil is the best preservative against rust, and the most convenient way of applying it without getting an unnecessary thick coating is as follows: One part of the oil is dissolved in 200 parts of benzine, and the objects, after being thoroughly dried and warm, are plunged into the solution. Instruments with joints, as scissors or needle holders, are worked in the fluid, so as to cause it to penetrate into all crevices, and the benzine is then allowed to evaporate in a dry room.—*Pharm. Zentralh.*

INTRAPERITONEAL INSERTION OF BURIED CAPILLARY GLASS TUBES OF RADIUM EMANATION

RESULTS IN TWO CASES OF TUMOR OF THE GASTRO-INTESTINAL TRACT

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The intratumoral application of buried capillary glass tubes containing radium emanation presents a comparatively new departure in radium therapy. The method was originally suggested by Duane, and subsequently developed by the late H. H. Janeway. The results to date are so gratifying that, in my opinion, the method will play a prominent part in the future development of the whole field of radiotherapeutics.

Fig. 1 (Case 1).—Tumor of second part of duodenum before treatment.

TECHNIC

Radium emanation—an elementary body in the state of a heavy gas—is the first active product of decomposition of radium. It is collected by means of appropriate apparatus in capillary glass tubes from 3 to 5 mm. long. The tubes, containing between 0.3 and 1.5 millicuries of radium emanation each, are sterilized either by boiling or by immersion in an alcoholic solution of iodin, and are inserted by the aid of a trocar into the tumor tissue. These tubes exert a comparatively weak but continuous action on the tissues which lasts for several weeks. The cumulative action of 1 millicurie is calculated to equal 132 millicurie hours. Depending on the mass of the tumor, the number of tubes and the strength of each varies. The tumor tissue immediately surrounding the capillary is influenced by the soft beta rays, and may become necrotic. This area of necrosis is minute in extent and acts as a filter on the soft rays. The next zone of tumor tissue is then influenced only by the hard gamma rays of radium. As an ultimate result, the tumor tissue in the vicinity of each capillary tube is replaced by a connective tissue capsule which wholly encloses the tube. The latter meanwhile becomes inert and causes no discomfort to the patient. When the capillaries do not contain more than 1 millicurie of radium emanation and the tubes are not placed too close to one another, there does not take place any sloughing of tissue.

In the course of the last two and a half years, I have used this method extensively on intraperitoneal

tumors of the gastro-intestinal tract, the uterus, the ovaries and retroperitoneal tumors. An exploratory laparotomy is performed. When it is found that the tumor itself is inoperable, i. e., cannot be completely removed surgically, then the emanation tubes are

Fig. 2 (Case 1).—Tumor of duodenum after radium treatment: *A*, patent pylorus.

inserted into the tumor, and this is followed by the necessary palliative surgical procedures. The laparotomy incision is immediately sutured.

RESULTS

The following two cases indicate the results which may be obtained by this method of radium therapy:

CASE 1.—O. B., a man, aged 55, was admitted, Oct. 3, 1921, to the service of Dr. Jerome Lynch at St. Bartholomew's Hospital, with symptoms of pain in the stomach, nausea and severe attacks of vomiting. The patient had lost 45 pounds (20 kg.) within six months. There was a tumor in the middle line of the abdomen, 2 inches above the umbilicus, about the size of an orange, freely movable. Provisional diagnosis was made of a tumor of the hepatic flexure. Roentgen-ray examination (Fig. 1) disclosed a complete obstruction in the pyloric region. None of the barium suspension passed beyond the pylorus. Laparotomy was performed, October 4, by Dr. Lynch. The tumor was situated in the second part of the duodenum, and could not be removed surgically. I inserted radium emanation capillaries throughout the tumor, and then a gastro-enterostomy was performed. November 9, the patient was discharged clinically improved; there was no vomiting, and bowel movements were regular. The patient had gained 4 pounds (1.8 kg.) since the operation. The mass appeared to have receded in size. December 8, the patient was readmitted to the hospital for further study and treatment. He had gained 16 pounds (7.25 kg.) since the operation, and the tumor mass was not palpable. A second laparotomy was performed; the tumor was one fourth of the original size, and very hard in consistency. Again radium emanation capillaries were inserted into the mass, and the wound was closed. December 21, a second roentgen-ray examination disclosed that the barium suspension filled the stomach completely; gastric contents began to empty through a stoma into the jejunum immediately. No other abnormality was noted. Three hours later a very small gastric residue remained; the appearance was such as to suggest that part of the stomach contents was passing along the normal route (Fig. 2 A, A, A).

The essential points in this case are that the whole volume of the tumor shrank considerably and this shrinkage apparently took place also in the depth of the tumor so that the lumen of the duodenum became patent and the original obstruction of the pylorus was partially relieved.

CASE 2.—S. F., a man, aged 58, a patient of Dr. Leo Buerger, in December, 1921, began to complain of pain in the epigastrium, and constipation. A mass was felt in the region of the transverse colon, slightly movable. Roentgen-ray examination (Fig. 3) revealed a complete filling defect in the middle of the transverse colon. However, the obstruction apparently was not complete, since the barium passed into the peripheral end of the transverse colon. December 31, a laparotomy was performed by Dr. Buerger. The tumor infiltrated diffusely all the walls of the transverse colon, and the whole mass, which measured about 3 inches long by 2½ inches deep and about 2 inches wide (7.5 by 6.5 by 5 cm.) was firmly bound down to the posterior wall of the peritoneal cavity. The tumor, consequently, was inoperable. I inserted radium emanation capillaries into the tumor, and the wound was closed. The patient left the hospital at the expiration of four weeks, feeling well and having regular bowel movements.

Late in March he was examined again. He felt well, and the tumor was not palpable. March 27, a second laparotomy was performed. The tumor was a third of its original size and freely movable, so that possibly an attempt at a radical removal might have been made. However, since the patient felt well, and there was no evidence of obstruction, it was

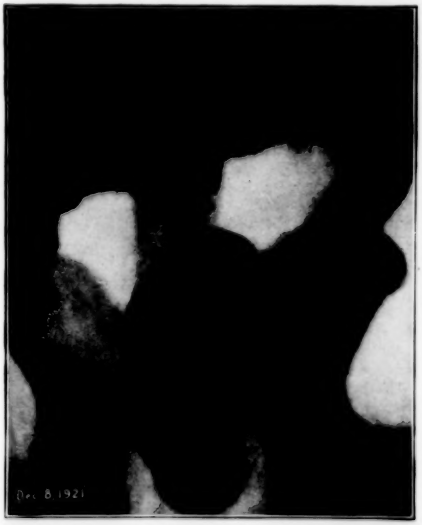

Fig. 3 (Case 2).—Tumor of transverse colon before treatment: *A*, filling defect.

decided not to undertake a severe surgical interference, but instead a few more radium emanation tubes were inserted into the tumor, and the wound was closed. June 9, roentgen-ray examination revealed a very striking picture. The extent of the filling defect was somewhat diminished, and a new canal formed between the two ends of the transverse colon. Apparently here again the tumor was shrunk in all directions,

as a result of which a small lumen was formed in the center of the tumor through which the barium emulsion passed. Figure 4 shows the new canal at *A*.

CONCLUSIONS

Both the method itself and the two cases reported are too recent to indicate the final results of this method of radium therapy in cancer. The efficiency of the method, however, is evidenced by the results obtained in these two cases, as well as in several others which will be reported later. The patients make an uneventful recovery, and there is no rise in temperature, and no peritoneal irritation or subsequent sloughing of tissue.

In a word, the insertion of radium emanation does not add in the least to the hazard of the operation. At the same time, the tumors diminish in size considerably. This shrinkage takes place gradually in the course of from six to eight weeks after the operation.

Inoperable carcinoma of the gastro-intestinal tract presents the most hopeless type of cancer. Surface applications of radium alone is ineffectual in the majority of cases. Deep high voltage roentgen-ray therapy does not influence this class of cases, and is followed frequently in my experience, as well as in that of other investigators, by severe cachexia.

Thus the method of intratumoral insertion of radium emanation produces no general deleterious effect on the organism, and at the same time in every instance causes a shrinkage of the tumor mass. The method seems, therefore, to be of great promise, and should be tested by all surgeons and radiotherapeutists who are in a position to obtain the capillary tubes of radium emanation.

119 West Seventy-First Street.

Fig. 4 (Case 2).—Tumor of transverse colon after radium treatment: *A*, new canal formed between the two ends of the colon.

Medical Teaching in Mexico.—For nearly three centuries, medical teaching in Mexico was in charge of the royal protophysicians. These, in addition to supervising public health and the practice of medicine, taught the subjects at the university and examined applicants. This practice lasted until Mexico proclaimed its independence from Spain, when the so-called papal university was closed. In 1823 and 1825 bills providing for the organization of a medical school were passed but no action was taken until a physician, Dr. V. Gómez Farías, became president of the republic and ordered in a decree, dated Oct. 23, 1833, the foundation of the school. This was done on Dec. 4, 1833. Its first head was Dr. Casimiro Licéaga, assisted by a group of twelve professors. The school at first was lodged in convents, but in 1854 the government bought the old building of the Inquisition, which the school still occupies.

TUBERCULOSIS OF THE TESTIS IN A CHILD*

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Whether or not tuberculosis may be primary in the body of the testis has aroused much argument. Hektoen[1] states that "tuberculosis of the testis and epididymis is common, and it may be primary in either organ in the sense that the testis or epididymis may be the first organ in the genito-urinary tract to be affected." It is in this sense that I wish to present briefly the history and pathologic report of a case of tuberculosis of the testis in a child, aged 3 years. The left testis was almost entirely involved in the tuberculous process, while careful examination of the epididymis failed to reveal any lesion.

Tuberculosis of the testis in children presents apparently a somewhat different pathologic condition and pathogenesis from that affecting the adult male.

REPORT OF CASE

History.—M. M., aged 3 years, was brought to the service of Dr. L. E. Schmidt in the Sarah Morris Hospital, Aug. 31, 1920. The mother said that the child suffered from pain and swelling of the scrotum, especially on the left side. The first symptoms occurred one day before entrance to the hospital. The mother said that while bathing the child she observed swelling of the scrotum, and that the child complained so of pain that she was prevented from cleansing the parts. The mother had not been in the habit of bathing the child herself, and, therefore, could not state the exact date of the first appearance of the swelling. However, the child had not complained of pain until the day before he was brought to the hospital.

The child had been delivered normally and was breast fed. His appetite had been poor usually. There had been no painful urination, and the child usually slept well. There was no history of previous illness. The family history was negative, except for the fact that the child's father had been suffering with a chronic cough for the last two years.

Physical Examination.—No positive findings were revealed except swelling of the left half of the scrotum. The skin was slightly erythematous, and the left testis was enlarged to about three and one-half times its normal size. The testis was very sensitive to palpation, and the epididymis was apparently also enlarged.

* Read before the Chicago Urological Society, May 18, 1922.
* From the Department of Genito-Urinary Surgery and the Nelson Morris Memorial Institute for Medical Research of the Michael Reese Hospital.

1. Hektoen, Ludvig, and Riesman, David: An American Textbook of Pathology, Philadelphia, 1901.

Laboratory Findings: The white blood corpuscles numbered 13,750; red blood corpuscles, 4,900,000. All other findings in the urine and blood were negative. The roentgen-ray examination of the chest was negative for any evidence of pulmonary or bronchial gland tuberculosis.

Operation.—In view of the findings, it was determined to operate. A high castration of the left testis with the epididymis and as much of the vas as could be reached was performed. There was a small amount of clear hydrocele fluid present. The wound healed by primary union, and the temperature at no time reached above 100.2 F., taken rectally. So far as we can determine, the child has not suffered any extension of the process.

Report of the Pathologist.—Dr. O. T. Schultz, director of the Nelson Morris Memorial Institute for Medical Research, made the following report:

Gross: The specimen is a rounded mass, 3.3 by 2 by 2 cm., with a piece of spermatic cord, 2 cm. long, attached. The surface is smooth and pale. Near the lower pole of the mass is a firm nodular area, and near the upper pole another similar area. The epididymis cannot be distinguished from the body of the testis, externally. On section, the body is uniformly dense, pale and firm, and has lost the appearance of testicular tissue. The epididymis is compressed along one side of the body. In places, it appears somewhat denser than normal, but it is apparently involved to a much slighter degree than the testis.

Microscopic: The tubules of the testis are almost completely replaced by avascular cellular inflammatory tissue composed of fibroblasts and lymphocytes. In this tissue are numerous endothelioid tubercles with large giant cells. In areas, the tubercles are so closely placed that they have fused, forming conglomerate tubercles which are centrally necrotic. In the peripheral portion of the testis, a few groups of tubules can still be recognized. Spermatogenesis is absent. In some of the tubules, the epithelium is separated from the wall. The epididymis is quite sharply demarcated from the testis by a layer of fibrous tissue, which, next to the testis, is infiltrated by lymphocytes. The tubules of the epididymis are normal. The outer layer of the walls of some of them is slightly infiltrated by lymphocytes. The intertubular stroma is somewhat edematous; about some of the vessels is a slight degree of lyphocytic infiltration. The epididymis, in sections from various levels, is entirely free of tubercles, and is not even involved by direct continuity from the markedly involved testis. In sections through the cord, the vas is normal. Moderate edema and slight perivascular lymphoid infiltration are present in the loose tissue about the vas, but tubercles are entirely absent. The tuberculous process is very clearly limited to the testis. Such slight inflammatory reaction as is present in the epididymis and vas is not tuberculous in character, and is apparently wholly secondary to the involvement of the testis.

Fig. 1.—Section, showing, in the left upper portion, normal tubules of the epididymis; central portion, inflammatory changes in tunica, no evidence of tuberculous lesions; right lower portion, remnant of testicular tissue, and at periphery, productive tuberculous involvement; slightly reduced from a photomicrograph × 60.

Pathologic Diagnosis: Diffuse productive tuberculosis of the testis.

COMMENT

According to Kocher,[2] in primary tuberculosis of the testis, the entire organ is involved. It appears as a hard body with a relative homogeneous surface in which the normal characteristics of testicular substance are no longer to be seen. Adami[3] says that in adults with tuberculosis of the testis the process begins in the epididymis and involves the testis secondarily, while in children before puberty the reverse is the case. Felizet[4] states that acute tuberculosis of the testis may assume the form of acute hydrocele or acute orchitis.

A further careful search of the literature reveals many cases reported as tuberculosis of the testis which were actually tuberculosis of the epididymis, while the testis was free from lesions.

There has been considerable discussion as to the manner in which the testis is involved by the tubercle bacillus. Kocher said that there were three possibilities: First, that involvement occurred by way of the blood stream; second, that it occurred by way of the mucous surfaces through the urethra; third, that bacilli are present at birth and develop after local trauma. Rokitansky[5] considered the infection to be an ascending one, beginning in the testis. Simmonds,[6] however, states that the spread of the infection is always toward the testis (testipetal), against the current of the secretory stream. Baumgarten[7] differs wholly from Simmonds, saying that the dissemination of tuberculosis in the male genital tract is always in the direction of the physiologic current. In agreement with him also are such authorities as Virchow,[8] Corning,[8] Ranvier,[8] Dufour,[8] Jullien,[9] Weigert,[10] Hueter[11] and Ziegler.[8] In opposition to this view, however, are ranged Cohnheim,[8] Steinthal,[8] Tuffier[8] and Terillon.[8] In view of this diversity of opinion, certain fundamental principles and the results of research on this subject merit discussion.

Clinicians and pathologists of experience will agree that in discussing human pathology the words "always" and "never" should give way to the terms "usually" and "seldom." With this point of view in mind, it appears from careful histopathologic research that either or both processes mentioned may operate in a given case or in a series of cases.

2. Kocher, Theodor: Die Krankheiten der männlichen Geschlechtsorgane, Stuttgart, F. Enke **48**, 1887.

3. Adami, J. G., and McCrae, Thomas: Textbook of Pathology, Philadelphia, Lea & Febiger, 1912.

4. Felizet: Tuberculose testiculaire chez les enfants, Progrès méd., 1899.

5. Quoted by Kocher (Footnote 2).

6. Simmonds: Virchows Arch. f. path. Anat., 1906, p. 183; ibid. 1914, p. 216.

7. Baumgarten: Experimentelle Untersuchungen über die Histologie der Hodentuberculose, Verhandl. d. deutsch. path. Gesellsch., 1901, p. 91. Baumgarten and Kroner: Experimentelle Studien über Histogenese und Ausbreitung der Urogenital-Tuberculose, Tübingen **5**, 1906.

8. Quoted by Sussig: Deutsch. Ztschr. f. Chir. **165**: 101 (July) 1921.

9. Jullien: De la tuberculose testiculaire Arch. gén. de méd., April, 1890.

10. Weigert: Virchows Arch. f. path. Anat. **88**: 307, 1882.

11. Hueter: Ausbreitung der Tuberculose in männlichen urogenital System, Beitr. z. path. Anat. u. Physiol. **38**, 1904.

Until 1921 all reports in the literature, as far as I have been able to determine, have dealt with well advanced clinical cases or cases coming to necropsy. In this connection, Strümpell [12] remarks, "In cases coming to necropsy the tuberculous lesions are usually so widespread that the location of the very beginning of the process cannot be definitely determined." The work of Sussig, who laboriously examined between 150,000 and 180,000 serial sections of the male genital tracts of thirty patients dying of acute tuberculosis, none of whom showed gross lesions of the seminal tract, deserves especial attention. Twenty of the thirty cases examined were entirely negative microscopically, as far as lesions in the genital tract were concerned. His findings of microscopic lesions in the ten positive cases demonstrate conclusively that early hematogenous tuberculosis of the genital tract possesses a marked tendency to attack blood vessels first. In 60 per cent. of the early cases definite vascular involvement occurs. Sussig's work also definitely demonstrates that no single organ in the male genital tract is solely the site of predilection for the primary focus of tuberculosis in the tract, but rather that tuberculosis can and does attack every organ in the genital tract and can produce any possible combination of organs involved. This, as I shall try to show later, is extremely important from the prognostic as well as the therapeutic point of view.

The ten positive cases show the following organs involved: Case 1, epididymis; Case 2, testis and seminal vesicle; Case 3, left spermatic vein; Case 6, seminal vesicle; Case 7, testicle, seminal vesicle, epididymis and spermatic plexus; Case 9, testis, seminal vesicle and prostate; Case 11, epididymis, seminal vesicle, prostate and vas deferens; Case 12, epididymis, seminal vesicle; Case 13, prostate, and Case 14, prostate.

Thus it will be noted that the primary microscopic lesions in the genito-urinary tract were multiple in most of the cases. In four of the cases it was single. Twice the solitary focus was in the prostate, once each in the left spermatic vein and in the seminal vesicle. In 70 per cent. of the cases a primary microscopic focus was present in the seminal vesicle, in 50 per cent. in the epididymis, and in 30 per cent. in the testis.

Usually the testis is involved secondarily from the epididymis, but not invariably. This fact has been denied chiefly in the American literature on the subject. The case reported is evidence of this fact, as is also Sussig's case in an 11-weeks old infant in whom the testis was involved, whereas in serial section of the epididymis, no tubercles were found. The tubercles in the testis were all in the interstitial tissue and invariably about a blood vessel. A tubercle which was followed in serial section could be seen attacking first the wall of the blood vessel and eventually breaking into the lumen of a tubule. Hutinel and Deschamps [14] have reported examinations of tuberculous testes in children in whom they saw the lesions begin along the blood vessels, and they believe that it is possible for bacilli coming from without, by the respiratory or digestive route, to reach the testicle by way of the blood stream without coming from a primary focus existing in the body. This opinion as a whole has not, of course, been substantiated, and I believe that in most cases a primary focus exists outside the genito-urinary tract. Lecène [15] reports a case of an isolated tuberculous focus in the epididymis in which the lesions were confined to the outer walls of the tubules and in no instance involved the mucosa, thus confirming the observations of Sussig and Deschamps and Hutinel.

Fig. 2.—Productive tuberculosis involving practically the entire testis; characteristic giant cell in center of endothelioid tubercles; slightly reduced from a photomicrograph × 230.

Reclus [5] reported three cases of tuberculosis of the testis in which the epididymides were not involved. Collinet,[5] out of forty-one cases, reported nine in which the epididymides were not involved. Kocher [2] said that after carefully examining material obtained at necropsy he believed there are cases in which tuberculosis of the testis remains the only tuberculous change until death. Koenig [16] said that tuberculosis of the testis may remain in loco, but that it need not do so. Shaw [17] reports the case of a man, aged 26, with a large caseating nodule in the right testis, centrally situated, in whom the epididymis, cord and tunica were normal. The left testis was normal. However, the left epididymis was the site of advanced tuberculous changes. These findings speak very strongly for a hematogenous infection and against dissemination by the mucous surfaces. Barling [18] reports the case of a patient, aged 31, similar to the one reported herein, in which there was bilateral acute tuberculosis of the testes, and the epididymides were free from lesions. Trauma preceded the swelling of the testes.

Legueu [19] states that the epididymis is always involved first, and that the testis is secondarily infected by extension along the mucous surfaces. This point of view is contradicted by Lecène,[15] who remarks that all of Legueu's conclusions are open to attack. MacFarland Walker [20] says that in all his cases the earliest signs were demonstrable in the lower pole of

12. Strümpell, Adolf: Lehrbuch der speciellen Pathologie und Therapie der inneren Krankheiten, Ed. 16, Leipzig, F. C. W. Vogel, 1907.
13. Sussig: Deutsch. Ztschr. f. Chir. **165**: 101 (July) 1921.
14. Hutinel and Deschamps: Arch. gén. de méd. 1891.
15. Lecène: Bull. Soc. anat. de Paris **81**: 479, 1906.
16. Koenig René: Beitrag zum Studium der Hodentuberculose, Deutsch. Ztschr. f. Chir. **18**, 1898.
17. Shaw, J. B.: Tuberculous Testes Following an Attack of Measles, Brit. M. J. **1**: 1586, 1898.
18. Barling, G.: Double Acute Tuberculosis of the Testis, Lancet, 1892, p. 864; ibid., 1892, p. 899.
19. Legueu: Traité chirurgicale d'urologie, 1910.
20. Walker, MacFarland: Lancet **1**: 435 (Feb. 15) 1913.

the epididymis and explained this by stating that the fact "that the lower pole of the epididymis should be the commonest site is only to be expected if the tuberculous infection is a descending one." This view may be discarded in the light of more recent observations and histopathologic research.

Keyes [21] states that testicular tuberculosis is never an isolated lesion. In a recent article, Young [22] says, "These statistics show conclusively the absence of isolated testicular tuberculosis and the rarity of testicular involvement when the epididymides are extensively involved." Further in the article he states that "it is probably erroneous to suppose that primary tuberculosis of the epididymis often occurs. It probably seldom occurs through blood stream infections, as is so often asserted. The seminal vesicles are not only the primary focus from which the epididymides are involved, but from which also the prostate, bladder and the kidneys in many cases are involved." He is undoubtedly correct in many of the conclusions expressed in his article, especially in showing that tuberculosis of the adult testis or epididymis is often but a part of the pathologic change present. In the statement that blood stream infection is rare, I cannot concur; nor can I in the view that the testis and epididymis seldom represent the primary focus of the disease. It is undoubtedly true that the seminal vesicles present the most frequent site of primary foci in the seminal tract; but when it is borne in mind that the earliest microscopic evidence discloses the primary focus to be multicentric in 60 per cent. of the cases and that the frequency of earliest foci in the seminal vesicles, epididymides and testes are represented by the figures seven, five and three, respectively, it is apparent that the testis and epididymis together are more frequently the site of the primary focus than the seminal vesicle.

CONCLUSIONS

1. Tuberculosis of the testis may be primary and even solitary as far as the genito-urinary tract is involved.

2. The infection when primary in the testis is hematogenic and first involves the blood vessel walls, later breaking into the lumen of the tubules.

3. Infection via the mucous surfaces is possible in the chronic type of the disease but not the only method of dissemination.

4. Acute hematogenous tuberculosis of the testis involves the entire gland, owing probably to the rich anastomoses of the peculiar blood supply of the organ.

5. Tuberculosis of the male genital tract is more often primarily multicentric than single.

6. Tuberculosis may affect the testis on one side and the epididymis or seminal vesicle on the opposite side.

7. Tuberculosis of the testis is usually, in the adult, secondarily involved by extension from the epididymis. In children the reverse is true.

8. Surgical removal of a tuberculous testis is indicated in acute infections of the gland if there is no evidence of other tuberculous foci. The disease may be localized there.

9. Unilateral radical removal of the seminal tract is not indicated because involvement of contralateral organs is not infrequent in the disease, while corresponding organs may be free.

10. General hygienic care and upbuilding of the patient, as advised by Thompson Walker [23] in the treatment of chronic cases, is rational.

11. The roentgen ray offers the hope for cure in many cases of the chronic type, as recent reports indicate.

21. Keyes, E. L., Jr.: Ann. Surg. 45: 918, 1907.
22. Young, H. H.: The Radical Cure of Tuberculosis of the Seminal Tract, Arch. Surg. 4: 334 (March) 1922.

23. Walker, Thompson: Surgical Diseases and Injuries of the Genito-Urinary Organs, London, Cassell & Co., 1914.

A SCARLET FEVER EPIDEMIC IN AN AGRICULTURAL SCHOOL*

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In February, March and April of 1922, fifty-nine of the 840 students of the agricultural school of the University of Minnesota contracted scarlet fever. At this university, the powers and the responsibilities of health officer and of practitioner of medicine are vested in one organization—the Students' Health Service. This dual interest makes possible careful studies by one institution both of epidemiologic conditions and of clinical cases. Such studies, made of the scarlet fever epidemic, are epitomized in this article.

ENVIRONMENTAL CONDITIONS

The school of agriculture admits as regular students boys and girls who have completed eighth grade work or its equivalent; and as special students, men and women of mature years. Exclusive of the 262 ex-service men who were here receiving vocational training, most of the students came from rural communities, 59 per cent. of them living in places of less than 100 population. This gave a group of boys and girls most of whom were between 16 and 25 years of age, with presumably very little immunity to the usual contagious diseases of childhood. At the school, 36 per cent. of these students lived in dormitories, and 40 per cent. took their meals in a common dining hall. Most of the others rented rooms near the campus, and took their meals at restaurants or boarding houses. The conditions here closely paralleled those in certain of our national Army camps, where the more common contagious diseases took a high toll both in morbidity and mortality. A review of the history of the university shows that in this school, as in no other part of the institution, have frequent and extensive epidemics of contagious diseases occurred.

THE OUTBREAK AND COURSE OF THE EPIDEMIC

During the winter of 1921-1922, there were many cases of scarlet fever in the Twin Cities, and, in November and December, three university students were sent to the hospital with this disease. It was not, however, until January 25 that scarlet fever made its first appearance in the school of agriculture. A girl, aged 18, was the first victim. She knew of no exposure to scarlet fever; but she had spent the week-end, before being taken sick, at her home, returning to school one day before the development of her first symptoms. As to the source of her infection, one can only speculate; but, as there were no other patients at the school and except for her trip home she had remained on the campus, it seems probable that she was exposed during her trip. This girl was isolated immediately on her

* From the Students' Health Service, University of Minnesota.

reporting to the health service. Her closest associates, although not isolated, were inspected daily for evidences of infection. In spite of the fact that this girl had been living in a dormitory, there was, during the epidemic, only one other case from any of the girls' dormitories, and that one developed more than a month later.

A boy, aged 17, was the second victim, his first symptoms appearing January 31. On the evening of January 24, he had taken a walk with Miss W—, the first patient, who at this time had a beginning sore throat. There was no other known exposure. As the onset was sudden and severe, the patient reported immediately to the health service, and was placed in isolation. The rash appeared on the following day, the second day of the disease.

The third patient came from one of the boys' dormitories. The first symptoms appeared, February 1. On the following morning, he reported to the dispensary, and was isolated. His rash appeared two days later. From this time on, new cases appeared, at the rate of from one case in three days to four cases in a day.

The course of the epidemic in three-day periods is shown in Chart 1.

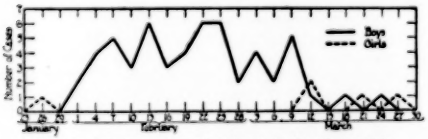

Chart 1.—Incidence curve of epidemic in three-day periods.

PREVENTIVE MEASURES

The preventive measures which were put into effect by the health service may be briefly outlined as follows:

1. Reduction of direct contact by (*a*) prompt isolation of all patients and of students in whom suspected cases were developing; (*b*) isolation for seven days of all students directly exposed to a scarlet fever patient before his isolation; (*c*) daily throat inspections, the throats of all students being examined daily over a period of thirty-eight days; (*d*) the prohibition of all gatherings of large groups of students, such as parties, dances and assemblies; (*e*) the closing of the gymnasium and swimming pool; (*f*) the separation in the dining hall of boys and girls; (*g*) the education of the student body by means of bulletins and public addresses concerning the early symptoms of scarlet fever, the usual method of transmission and the necessity for reporting to the dispensary on the very earliest appearance of symptoms.

2. Reduction of indirect contact by (*a*) the supervision of the dishwashing process and directing that live steam be turned on all dishes before they were removed from the machine; (*b*) the adoption of paper napkins, which were burned after use; (*c*) the collection and sterilization of all clothing and bed clothing from the rooms of all patients having scarlet fever, immediately after diagnosis.

3. Precautions against return cases by (*a*) quarantine in the hospital of all patients for a minimum of twenty-eight days; (*b*) holding all patients until the mucous membranes of the nose and throat seemed normal; (*c*) exclusion of all patients from classes and dormitories for one week after release from hospital.

Those measures apparently kept the disease limited to the school students, not affecting the college of agriculture, and to the boys within the school. Among them, however, a new case continued to appear every few days, so that, February 28, the radical procedure of isolating all students with reddened throats was resorted to. Previous to this time, at the daily inspections, all students with suspicious signs or symptoms were picked out of line; their temperatures were taken, and they were thoroughly examined and either isolated or kept under close observation. After this date, however, the examiners at the daily inspections picked out of line all students whose tonsils or pharyngeal walls appeared at all injected. Those who lived at home were instructed to remain there for from three to five days, during which time they were advised either to consult a private physician or to come daily to the dispensary for examination. Those who lived in the dormitories were isolated in the large gymnasium, cots being provided and placed well apart. Isolation within this group was not perfect, but with the large floor area and air space, close contact was infinitely less than in the dormitories. If any of these students developed a fever or definitely suspicious symptoms, they were removed from the gymnasium and placed in solitary isolation. This extensive isolation was begun on February 28, and continued until March 7, at which time the epidemic appeared to be at an end. After this date, only three persons developed the disease; one was a school girl, one a school boy and one a dining hall maid.

As to whether, without this extensive isolation, the epidemic would have ceased at this time one cannot say. However, up to March 6, the date after which the most marked drop in the incidence curve occurred, there had been fifty-two cases, over a period of six weeks. This was an incidence of 6.2 per cent. The health records of the general student body were at this time not sufficiently complete to give accurate information as to the percentage of immunes and susceptibles in the group. It does not seem likely, however, that in such a student body 6.2 per cent. of the total number would represent anywhere near the proportion of nonimmunes. If this assumption is correct, it is probable that the striking relationship, as shown in Chart 2, between the number of students in isolation and the incidence of new cases is more than a coincidence.

The "known exposures," which are shown in the third curve in Chart 2, represent the unisolated students who were showing some symptoms. Their number on each day was computed by determining the number of students who, when they later developed scarlet fever, stated that on that particular day they had had some symptoms. Of our patients, 70 per cent. were isolated before the rash appeared. Of the other 30 per cent., practically all were isolated immediately on the appearance of the rash, only five patients remaining unisolated as long as twelve hours. Hence, our "known exposures" represent for the most part cases which were showing only the very earliest of symptoms. Concerning the importance of such cases in the transmission of the disease, there is considerable difference of opinion. Rosenau[1] writes, "It is commonly stated that scarlet fever is not contagious during the period of incubation; little, if any, during the period of invasion, and most contagious during the period of

1. Rosenau, M. J.: Preventive Medicine and Hygiene, New York, D. Appleton & Co., 1922, p. 280.

eruption." Forchheimer [2] is still more emphatic when he says that "in a large experience with scarlet fever, the author has never seen a second case arise from exposure to the patient during the preeruptive stage. Indeed, it is his experience that the disease is not very contagious even during the first day of eruption." Griffith,[3] on the other hand, believes that the period of infectivity undoubtedly commences on the appearance of the first symptoms or even before. In this epidemic, as Chart 2 shows, the coincident drop in cases and "known exposures," when extensive isolation was begun, is suggestive as well as interesting.

TRANSMISSION

Against the older belief that the epidermal scales make up the chief source of infection in scarlet fever, so much evidence has been produced that the theory is now generally rejected, and today authorities agree that the discharges of the nose, throat and ears contain the virus and are most important in the spread of the disease. But as to whether this transmission is more frequently direct or indirect, there is considerable difference of opinion. Kobrak,[4] after a careful investigation of eight cases, was convinced that the disease is usually transmitted directly and that fomites are relatively unimportant. One argument which he offers in support of this belief is that, in fifty homes quarantined for scarlet fever where maids cared for the rooms but did not come in contact with the patients, not one of the maids developed the disease. He believes further that mild, unisolated cases are responsible for most exposure. On the other hand, Victor C. Vaughan [5] writes that "until we have some evidence to the contrary, we must continue to believe that scarlet fever is disseminated largely by fomites."

In addition to the transmission by fomites and by actual cases of the disease, the possibility of the transmission by carriers must be considered. Chapin,[6] in a study of the scarlet fever in Massachusetts from 1855 to 1916, concludes that the most frequent sources of infection are mild, missed cases, but that carriers are also probably of importance. Mironesco [7] reports experiences which convince him that, during an epidemic of scarlet fever, certain patients who show only a moderately sore throat may spread the infection. Chesley,[8] in discussing the control of scarlet fever, states that he believes that immunes may become carriers, and that, in attempting to control an epidemic, one must search for these carriers.

In the epidemic under consideration, all but 30 per cent. of the patients were placed in isolation before the rash developed, and not one was at liberty for more than twenty hours after the rash appeared. Desquamation had not commenced in any before isolation. All students with tonsillitis, or acute pharyngitis, were also isolated and observed for from seven to twenty days. Such isolation certainly should have removed from the community the atypical as well as the typical cases. Sixty-six roommates of scarlet fever patients were more or less intimately exposed. Of this number only one, or 1.5 per cent., developed the disease. For six and a half weeks during the epidemic, no girl contracted the disease, although the girls and boys associated in the dining room, in class rooms and in corridors. In only fifteen of the total of fifty-nine cases could definite evidence of previous exposure to known cases be obtained.

As to the means of transmission, there is in our epidemiologic study much apparently conflicting evidence. In some instances, the infection seems very definitely to have been spread by direct contact. In a few others, fomites seem to have been the only possible means of transmission. Most notable among this group is that of a maid in the dining hall, who contracted the disease as Case 55. Direct exposure could quite satisfactorily be ruled out. One of this maid's duties in the dining hall, however, was to collect and burn the paper napkins after each meal. At first, she carefully followed

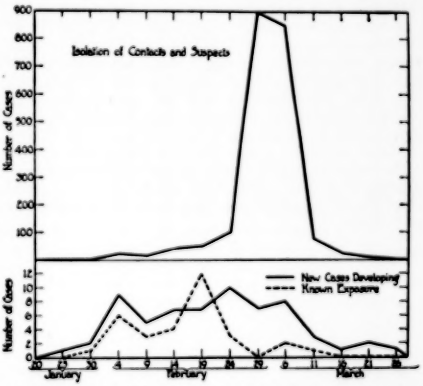

Chart 2.—Relation of incidence, isolation and known exposure. The points on the curves show the totals for five-day periods, of which the date indicated is the third day.

instructions; but afterward she admitted that toward the end of the epidemic she became careless about the washing of her hands after performing this duty. On March 12, she developed a mild but typical case of scarlet fever. In addition to those students who seem quite clearly to have been infected either directly or by means of fomites, 74 per cent. of our patients gave no history of close exposure, either direct or indirect, to known cases. This leads us to suspect that we were dealing with carriers, possibly themselves entirely normal but more probably with a mild atypical pharyngitis or tonsillitis. It was with this in mind that the extensive isolation of all students with "red throats" was determined on. The drop in the epidemic coincident with this isolation seems to be some evidence in favor of the conjecture.[9]

THE EPIDEMIC AND THE HEALTH OF THE STATE

When an epidemic of contagious disease occurs in an institution in which are found students from rural communities and from towns widely scattered, one cannot but consider the possible effects of the epidemic

2. Forchheimer, F.: Twentieth Century Practice of Medicine, New York, William Wood & Co. **14**: 13,1898.
3. Griffith, G. P. C., in Forchheimer: Therapeusis of Internal Diseases, New York, D. Appleton & Co., 1914, p. 17.
4. Kobrak, E.: Beitrage Zur Kenntnis des Ansteckungswege des Scharlachs, Ztschr. f. Kinderh. **26**: 150 (April 16) 1920.
5. Vaughan, V. C.: Epidemiology and Public Health, St. Louis, C. V. Mosby Co. **1**: 259, 1922.
6. Chapin, C. V.: Scarlet Fever, Boston M. & S. J. **175**: 715 (March 16) 1916.
7. Mironesco, T.: Angine et Scarlatine, Presse méd. **29**: 176 (March 2) 1921.
8. Chesley, A. J.: The Control of Scarlet Fever, Am. J. Pub. Health **6**: 234 (March) 1916.
9. For a more detailed epidemiologic study, the reader is referred to another article which is being prepared.

on the health of the state as a whole. In this instance, there was already established an organization which provided for the patients' immediate isolation and medical and hospital care, and for the rest of the community general and epidemiologic supervision. This made possible the prompt hospitalization of all who contracted the disease, provided for the early inauguration of control measures, formed the basis for a certain sense of security on the part of not only the students but also the faculty, and prohibited any students from returning to their homes until the epidemic was at an end. Suppose, as was suggested by Dr. A. J. Chesley,[10] executive officer of the Minnesota State Board of Health, the university had made no provision for an emergency of this kind, what would have happened? Possibly some of the students would not have received the prompt hospitalization that they needed; possibly some would have become panic stricken and returned to their homes; or possibly the school would have been closed and the students scattered broadcast over the state. As soon as the students had left the institution, they—the carriers, those in the incubation period of the disease, and the well alike—would have come in contact with age groups much more highly susceptible than themselves. Both en route and at their homes, they would have exposed children, among whom not only the morbidity but also the mortality rate is much higher than it is among young adults. The figures presented in Table 1 will illustrate the greater danger to the health of the state as a whole which would have resulted from any method of handling the epidemic which involved permitting the students to return to their homes.

TABLE 1.—MORBIDITY AND MORTALITY OF SCARLET FEVER IN MINNESOTA IN 1921 *

	Number of Cases	Fatality Rate Per Cent.
Total	6,588	2.9
Age unknown	220	0.0
Under 1 year	40	27.5
1 to 2 years	107	12.1
2 to 3 years	257	9.7
3 to 4 years	368	3.5
4 to 5 years	363	3.6
Total under 5 years	1,235	6.3
5 to 9 years	2,585	2.1
10 to 14 years	1,262	1.6
15 to 19 years	569	2.5
20 to 24 years	334	2.4
25 to 34 years	288	4.2
35 to 44 years	72	4.2
45 to 54 years	21	4.8
55 to 64 years	1	0.0
65 and over	1	0.0

* Report of Division of Preventable Diseases, State Board of Health, Scarlet Fever During 1921 in the State of Minnesota.

CLINICAL NOTES

Initial Symptoms.—Among these fifty-nine scarlet fever cases, we found practically every mode of onset which has ever been described: 15 per cent. were typical, with acute tonsillitis, vomiting, "strawberry" tongue, general malaise, fever and tachycardia; in 18 per cent., there was only a moderately severe tonsillitis with a low-grade fever; in 20 per cent., there was vomiting; in 51 per cent., a so-called early "strawberry" tongue was noted; that is, a tongue brighter red than normal, with very prominent papillae. At some time during the disease, 86 per cent. of the patients had "sore throat," while 6 per cent. had no subjective symptoms whatsoever before the rash appeared.

10. Chesley, A. J.: Personal communication to the authors.

Fever.—In most instances, the fever was between 100 and 103 F. for the first four to seven days, after which it gradually dropped to normal. One patient, Case 55, with an extensive rash, had fever only two days, one day 99 and the other 99.2 F. Other subjective symptoms were absent. In another patient, Case 16, the temperature reached 104.4 F. on the third day, and continued above normal for seventeen days.

Rashes.—In most cases, the rash was typical; but in two cases it was so transient that it was noted only once; while in three cases which had all the other clinical symptoms including desquamation, a rash was never seen either by the patient or by the physician. Table 2 will show the interval between the onset of first symptoms and the appearance of the rash.

TABLE 2.—INTERVAL BETWEEN ONSET OF FIRST SYMPTOMS AND APPEARANCE OF THE RASH

Day	Cases	Percentage
First	5	8.5
Second	34	57.8
Third	10	16.9
Fourth	2	3.3
Fifth	1	1.7
Sixth	2	3.3
Seventh	1	1.7
Nineteenth	1	1.7
No rash observed	3	5.1

Delayed Rash.—Case 47 presented such an unusual picture of a delayed rash that it is worth recording briefly.

CASE 47.—The patient was admitted to observation, February 26, complaining of "fever." The clinical notes on admission state that "the pharynx and palate are moderately injected; the tongue is very suspicious; skin shows no rash. Hold for desquamation." The temperature was 102 F., the pulse 116. Subjective symptoms subsided, and the temperature was normal on the fourth and fifth days. The "strawberry" tongue and adenitis persisted, and the pulse continued rapid, so observation was continued. From the sixth to the twelfth day, the temperature again rose, reaching 103 F. on the eighth day; but still no rash appeared. On the tenth and eleventh days, there was evidence of a right otitis media, and, on the twelfth day, spontaneous perforation of the drum occurred. From the twelfth to the nineteenth day, the temperature was normal, but the pulse rapid, for several days not going below 120. On the nineteenth day, with a clear tongue and no subjective symptoms, a typical and extensive scarlatinal rash appeared. The temperature, which at this time was 99.4 F., gradually became progressively lower, staying below 98.6 F. after the twenty-fourth day. Desquamation, which was typical, commenced coincidently with the appearance of the rash. Convalescence was normal and rapid.

From the time of admission, it was thought that this boy had scarlet fever, but observation was continued, and no diagnosis was made until the rash appeared. He seems either to have had a delayed rash, or possibly a relapse with a second rash. Mut [11] reports a somewhat similar case in a child of 4, in whom the rash did not appear until the end of the third week.

Leukocytosis.—From 8,600 to 19,500 leukocytes were present in all cases in which counts were made. The presence of leukocytosis was one of the points considered in differentiating atypical scarlet fever from the influenza which was occurring at the same time, the latter disease showing either a leukopenia or an absence of leukocytosis.

Desquamation.—Two of our patients showed beginning desquamation on the fourth day of the rash. At the end of four weeks, our minimum period of quaran-

11. Mut, J.: Tardy Eruption in Scarlet Fever, Arch. Espan de Pediat. **3**: 666 (Nov.) 1919; abstr. J. A. M. A. **74**: 834 (March 20) 1920.

tine, desquamation was complete in 66 per cent. of our patients, exclusive of those who were held longer in quarantine on account of complications. Eight per cent. with completed desquamation were held longer because of inflamed mucous membranes of the nose and throat; 29 per cent. with uncompleted desquamation were released from quarantine on the twenty-eighth day, on the basis of normal ears, noses and throats; 5 per cent. had neither completed desquamation nor normal appearing mucous membranes of the nose and throat at the end of the four-week period.

RETURN CASES

Two of our patients apparently were infected by students who had been released from quarantine. One victim was a girl who had danced with a boy the day after he had been released from quarantine. His attending the dance was contrary to instructions; for after release no student was allowed to attend student gatherings for a period of one week. The other victim was a boy who, also contrary to instructions, entertained in his room a friend who had just been discharged from the hospital. Both boys, who apparently carried the infection, had had cervical adenitis. The one was released on the twenty-eighth day with completed desquamation and normal mucous membranes. The other was held thirty-three days because of an inflamed pharynx. On discharge, desquamation was "practically complete." It seemed in this epidemic that the completion of desquamation bore no relationship to the infectivity of the patient.

SECOND ATTACKS

Of our fifty-nine patients, two gave a very definite history of a previous attack of scarlet fever. One had had the disease at the same time that a brother and sister had had it; while the other, although the only ill one in the family at the time, had been quarantined for scarlet fever and gave a history of a definite rash and desquamation. This is a definitely higher percentage of second attacks than is recorded by most writers. Vaughan [12] says that "second attacks of scarlet fever are rare."

RELAPSES

In addition to the patient in Case 47, whose clinical course is reported in detail above, as a probable instance of delayed rash, but who might possibly have had a relapse, the first rash having been so fleeting that it was never observed, there was one other boy in whom a relapse certainly occurred. While convalescing from a moderately severe first attack, this patient on the thirtieth day developed another typical and more severe attack of the disease. An abstract of the case follows:

CASE 30.—A boy, aged 17, was admitted, February 20, complaining of sore throat, headache, and backache. The temperature was 99.4 F., the pulse 100. The following day the temperature was 103.8 F., and all symptoms were aggravated. The condition of the tongue and pharynx was suspicious on admission. On the third day, the pharynx and palate showed the usual bright injection, and, on the fourth day, the tongue was described as being "typical red strawberry." The rash which appeared on the second day was not extensive, and persisted only one day. Desquamation began on the sixth day and was moderately extensive. An afternoon temperature of from 99 to 104 F. persisted until the twenty-first day. There were no complications at this time except a purulent nasal discharge.

On the thirtieth day, the temperature, which had been normal for ten days, was 99.2 F., and the following day, 102.2 F. The patient complained of general malaise and sore throat. The throat and tongue were typical of scarlet fever, and the following day a most pronounced rash appeared. Desquamation, which was continuous from the first attack, persisted until the sixtieth day. Cervical adenitis was moderate with this second attack. The urine was normal throughout, and convalescence was uneventful, the patient being discharged on the sixty-first day.

Instances such as this one, although not frequent, are reported in the literature. Holt [13] speaks of true relapses in which there are a second eruption, a rise of temperature, sore throat and the other usual symptoms. McCollum and Place [14] report fifteen relapses in 5,000 cases of scarlet fever. Five of these patients had a second relapse. Ludy, Hunt and Cogswell,[15] in an army hospital, noted three relapses in 500 cases. Hutinel and Nadal,[16] in a study of seven patients who had relapses between the thirteenth and thirty-ninth days, concluded that, in each case, there occurred some coincident infection which probably interfered with the immunity process. No such secondary infection was observed in our patients.

COMPLICATIONS

Epistaxis.—Although usually considered a complication, epistaxis was so frequent in our series that we came almost to consider it a symptom. It occurred in twelve patients, or 20 per cent., usually began about the second day, and was quite severe for from two to ten days. No ill effects could be attributed to it.

Cervical Adenitis.—This occurred thirty-two times, affecting 55 per cent. of the patients. About half of these complained of associated pain, but in none was there suppuration or protracted tenderness.

Acute Purulent Rhinitis.—Fifteen of our patients had a very severe infection of the nasopharynx, and in several the infection extended to the accessory nasal sinuses. All of these cases were severe and prolonged.

Orbital Cellulitis.—During the epidemic, two boys, definitely exposed to scarlet fever, developed very virulent infections of the tonsils, nasopharynx and ethmoid sinuses. Clinically, except for the absence of a rash and desquamation, both cases resembled scarlet fever. The onset was acute in each instance, and the fever was high, the pulse rapid, the tongue suspicious and the pharynx quite typical; and in one emesis was present. On the sixth day, each patient showed signs of a most acute purulent infection of the nasopharynx and accessory sinuses. From the ethmoid sinuses, the inflammation extended into the orbits, and each developed an extremely acute bilateral orbital cellulitis. Both were in a critical condition for several days, during which time they showed exophthalmos, local cyanosis, tenderness and extreme edema of the eyelids and forehead. Although neither rash nor desquamation was observed at any time, these boys were held in isolation until all nasal discharge had ceased.

Laryngitis.—Welch and Schamberg [17] speak of laryngitis as a rare complication, and one which occurs with a severe gangrenous angina. In this epidemic laryngitis, as evidenced by a very decided hoarseness or complete loss of the voice, occurred four times.

12. Vaughan, V. C.: Epidemiology and Public Health, St. Louis, C. V. Mosby Company **1**: 269, 1922.

13. Holt, L. E.: Diseases of Infancy and Childhood, New York, D. Appleton & Co., 1916, p. 962.

14. McCollum, J. H., and Place, E. H., in Osler and McRae: Modern Medicine, Philadelphia, Lea & Febiger **1**: 356, 1914.

15. Ludy, J. B.; Hunt, E. J., and Cogswell, L. H: Observations on Five Hundred Cases of Scarlet Fever, Mil. Surgeon **45**: 414 (Oct.) 1919.

16. Hutinel, V., and Nadal, M. L.: A propos des rechutes et des recidives de la scarlatina, Arch. de méd. d. enf. **24**: 471 (Aug.) 1921.

17. Welch, W. M., and Schamberg, J. F.: Acute Contagious Diseases, New York, Lea Brothers & Co., 1904, p. 381.

Three of these patients had a severe angina with cervical adenitis, while the other had a rather mild attack.

Otitis Media.—This common complication was noted in nine patients, 15 per cent. of the total. In only three was it suppurative.

Mastoiditis.—This condition did not occur in any of our cases which were frankly scarlet fever. One boy, however, who was for a time held in isolation because of a mild tonsillitis with a suppurative otitis media, developed, seven days after release, a septic temperature, general malaise, dizziness and vomiting. The right ear showed a discharge of thick, creamy pus. There was no pain, and physical examination revealed nothing else of importance. His afternoon temperature varied from 101.4 to 104.8 F. Leukocyte counts were from 12,600 to 20,000. The urine showed albumin, casts and leukocytes. There was no tenderness over the mastoid, and the infection in the middle ear was apparently subsiding. Blood cultures were at first negative, but later positive, for *Streptococcus hemolyticus*. At this time, a few metastatic subcutaneous abscesses developed. A roentgenogram of the mastoids showed "a normal left mastoid, but some haziness throughout the right, especially in the region of the attic." The roentgen-ray diagnosis was "first degree infiltration of the right mastoid." A mastoidotomy was performed on the sixth day, and pus was found in several of the cells. Two, five and eight days later, respectively, the three superficial abscesses were opened. Following these operations, the patient had a slow but progressive convalescence.

Arthritis, Simple.—Only four patients, or 6.6 per cent., developed a simple arthritis. The affected joints were all painful, tender and slightly inflamed. No effusion, however, was demonstrable. In each instance, a moderate rise in temperature accompanied the arthritis. After a few days of rest, application of local heat and administration of salicylates, all joint symptoms disappeared. The clinical pictures were that of rather mild acute articular rheumatism. The cervical adenitis, which was marked in three of these patients, may have been the focus to which the joint inflammation was secondary.

Arthritis, Suppurative, with Periarticular Abscess.—One of our patients developed a suppurative arthritis of the right knee and an abscess just above the left elbow joint. Several blood cultures were negative, but, since hemolytic streptococci were isolated from both the pus of the knee joint and that of the periarticular abscess, unquestionably they were present in the blood stream at certain times. The focus from which the septicemia developed was not identified. The course of the periarticular abscess was similar to that of the case described by Myers,[18] but the discharge from the knee continued for several weeks. A partial report of the clinical course of this case seems worthy of being included at this point:

CASE 15.—This boy, after passing a very toxic first week, with an average morning temperature of 100.4 F., and an average afternoon temperature of 103.6 F., developed, on the eighth day, a pain in the right knee, and fever, the temperature ranging between 101 and 104 F. He had a moderate cervical adenitis and a severe frontal headache, but there were no objective findings to indicate a sinusitis, and no evidence of middle ear infection. There was a leukocytosis up to 35,800, and three blood cultures were negative. The knee was swollen, inflamed, painful and tender. Aspiration gave a thin, purulent fluid, containing hemolytic streptococci. On the twentieth day, a liberal incision was made on each side of the knee joint, and about 400 c.c. of a thin yellowish pus escaped. A through and through drain was inserted under the quadriceps tendon, and a Thomas splint, with Buck's extension, was applied. About the time that the knee was opened, the patient developed a painful swelling just above the left elbow joint. This was incised six days later, and thin, brownish pus was obtained. The abscess was apparently close to the joint, but it did not extend into the capsule. After incision, the elbow promptly healed, but the knee continued to discharge for three and a half weeks. Passive motion of the leg, which was instituted on the fifth day after the operation, was gradually increased until active motion was possible. The temperature remained normal after the fifty-second day of the disease. The patient was discharged on the fifty-eighth day with about 50 per cent. function in the knee. Three weeks later, the function of the knee, which was rapidly increasing, had reached about 80 per cent. of normal.

Pneumonia and Empyema.—The first case in the scarlet fever epidemic, after running a course only moderately severe, developed, on the fourteenth day, into a typical lobar pneumonia. At first, the upper left lobe alone was involved, but the process extended to the lower lobe also. On the twentieth day, there were evidences of empyema, and, four days later, by means of a trocar, a catheter was introduced into the pleural cavity, and continuous irrigation with surgical solution of chlorinated soda by means of a negative pressure apparatus was instituted. No further complications developed, and convalescence was normal. The irrigations were continued for ten days, the patient being discharged fifteen days later.

Heart Complications.—The age of our patients makes the group rather comparable with Nobécourt's[19] series among French soldiers, but the incidence of heart lesions was decidedly lower than in his reports. Only one student on discharge showed evidence of an endocarditis. Further observation of this boy by his family physician confirmed the impression that mitral stenosis of mild degree, with regurgitation, was present. Pericarditis developed in one boy. Rosenbaum[20] found that 5 per cent. of 1,770 patients having scarlet fever developed myocardial complications. In our cases, no such diagnoses were made, although four patients, 6.6 per cent., did show some myocardial weakness, as evidenced by a considerable acceleration of the pulse on rising from a reclining to a standing position. In two of these, inconstant murmurs were heard, but they did not persist on discharge. There were no irregularities of rate or evidences of dilatation.

Albuminuria and Nephritis.—Although nephritis is considered one of the most frequent, as well as the most serious, of complications of scarlet fever, Osler[21] giving from 10 to 20 per cent. as the usual occurrence, in only three of our fifty-nine cases was it possible to make this diagnosis, and in these three all evidences of nephritis had disappeared before the patients were discharged. Albuminuria without casts or blood cells occurred in seven patients, or 12 per cent. Albuminuria with a few casts was found in three others, or 5.1 per cent. In both of these groups, the presence of albumin in the urine was transient, and the condition was considered as febrile albuminuria. A large amount

18. Myers, B. E. P.: Periarticular Abscess After Scarlet Fever, Lancet **1**: 589 (March 19) 1921.

19. Nobécourt, P.: L'endocardite scarlatineuse, Bull. de l'Acad. de méd. **80**: 162 (Aug. 13) 1918.

20. Rosenbaum, H. A.: The Heart in Scarlet Fever, Arch. Int. Med. **26**: 424 (Oct.) 1920.

21. Osler, William: The Principles and Practice of Medicine, New York, D. Appleton & Co., 1916, p. 337.

of albumin, with hyaline and granular casts and red blood cells, was present in the urine of three patients, 5.1 per cent. These findings were considered indicative of an acute hemorrhagic nephritis; in all of the cases the condition was mild, however, for none of the patients developed edema, and the urinary findings became normal as the fever decreased. In none of our patients were there abnormal urinary findings on discharge.

Jaundice.—The appearance of a true jaundice in scarlet fever seems to be considered by most clinicians as justification for a grave prognosis. Ludy, Hunt and Cogswell [13] report it as occurring three times in 500

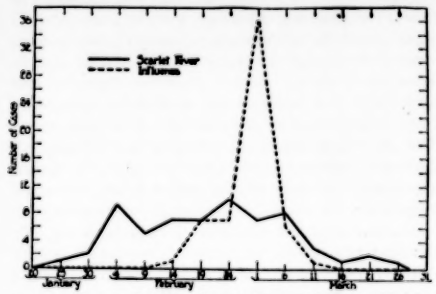

Chart 3.—Incidence of scarlet fever and influenza.

cases, and McCollum and Place [14] found it recorded fifteen times in 5,000 cases. The latter feel that it is not a symptom of gravity and that it may occur any time in the first three weeks. In one of our patients, jaundice, accompanied by clay colored stools, appeared on the sixth day. In forty-eight hours, the jaundice had reached the maximum intensity, after which it gradually subsided. During the jaundice, the patient was extremely toxic and his abdomen was distended, but there was no pain or tenderness. The cause of the jaundice seems to have been an angiocholitis or an angiocholecystitis.

Miscellaneous Complications.—A peritonsillar abscess occurred in one boy; acute purulent bronchitis, in two boys; purulent conjunctivitis, in three boys and one girl; urticaria, in one boy; furunculosis, multiple, in one boy; and erythema multiforme exudativum, in one boy.

COINCIDENT EPIDEMIC OF INFLUENZA

During February and March, while this section of the country was experiencing an epidemic of mild influenza or "grip," 374 students of the university contracted the infection, 182 of whom were admitted to the hospital as patients. Of the hospitalized cases, fifty-eight were in students of the school of agriculture. During the period of invasion, differentiation of influenza from scarlet fever was occasionally difficult. At this time, the aid of a leukocyte count usually made the diagnosis certain. Chart 3 shows the incidence of these two diseases among the agricultural school students.

It depicts clearly the difference between the usual course of an epidemic of scarlet fever and that of an epidemic of one of the acute respiratory infections, such as influenza. The former is quite protracted, while the latter has a high peak and then is soon over. On this chart, one notices a certain parallel decrease in the incidence of the two diseases; but, at this drop in the number of cases of influenza came at the same time as the decrease in the disease among the rest of the student body, it seems doubtful whether any significance can be attached to the circumstance. Certainly neither our clinical nor our epidemiologic observations indicated any relationship between the two diseases, such as is suggested by Wohl and Detweiler.[22]

SUMMARY

1. Fifty-nine cases of scarlet fever occurred among the students of the Agricultural School of the University of Minnesota from January 25 to March 26.

2. Of the patients, 93.3 per cent. were boys, and 6.7 per cent., girls.

3. Of the patients, 55.9 per cent. lived in rural communities; 33.9 per cent. in towns of less than 5,000 inhabitants, and 10.2 per cent. in cities of more than 5,000 inhabitants.

4. New cases developed at the rate of from one in three days to four in one day during the epidemic.

5. By means of daily throat inspection with isolation of all suspicious cases and contacts, the epidemic was kept under partial control; but it was not until all students with even slightly reddened throats were isolated that new cases failed to develop.

6. From the study of the epidemic, it seems probable that students showing no symptoms other than a moderately reddened throat were responsible for the transmission of much of the infection.

7. A review of the clinical notes in the cases shows a great diversity of symptoms and complications.

8. The mortality rate was zero.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, SECRETARY.

ARSPHENAMINE (See New and Nonofficial Remedies, 1922, p. 43).

Arsenobenzol-Billon.—A brand of arsphenamine-N. N. R.

Manufactured by Powers-Weightman-Rosengarten Co., Philadelphia, by license of Les Etablissements Poulenc Freres, Paris, and under U. S. patents 986,148 (March 7, 1911; expires 1928); 1,081,897 (Dec. 16, 1913; expires 1930); 1,081,592 (Dec. 16, 1913; expires 1930), 1,116,398 (Nov. 10, 1914; expires 1931) by license of the Chemical Foundation, Inc.

Arsenobenzol-Billon, 0.1 Gm. Ampules.
Arsenobenzol-Billon, 0.2 Gm. Ampules.
Arsenobenzol-Billon, 0.3 Gm. Ampules.
Arsenobenzol-Billon, 0.4 Gm. Ampules.
Arsenobenzol-Billon, 0.5 Gm. Ampules.
Arsenobenzol-Billon, 0.6 Gm. Ampules.

22. Wohl, M. G., and Detweiler, A. K.: The Epidemic of Streptococcic Grippe and Its Relation to Scarlet Fever, Interstate M. J. 27: 729 (Sept.) 1916.

Coal Mine Fatalities.—According to reports received by the Bureau of Mines, accidents at the coal mines of the United States caused the death of 186 men in October. The average fatality rate for October during the last nine years (1913-1921), as determined by the bureau, was 4.27 per million tons of coal, and the average number of lives lost during the same period was 238.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, DECEMBER 16, 1922

THE BUFF SUBSCRIPTION BLANK

For several years it has been the custom of THE JOURNAL to insert in a December issue a subscription slip for the use of Fellows and subscribers in remitting Fellowship dues and renewing subscription to THE JOURNAL for the coming year. The use of this slip by a large number of subscribers has been the means of insuring a saving to the Association of a considerable sum, realized not only through saving on postage but also in the clerical work necessary in taking care of yearly renewals. In this issue is inserted a buff colored subscription blank which may be used in returning remittance for 1923. It is hoped that all who have aided the Association previously by remitting in this manner will again avail themselves of the insert, and that a large majority of those who have not heretofore utilized the slip will do so now.

In this connection, attention is called once more to the announcement regarding the new publication *Hygeia*, described in our editorial columns last week and advertised again in this issue (advertising page 17). The preliminary offer made in this announcement gives opportunity to physicians to aid this new endeavor of the Association and at the same time insure a considerable saving to themselves in subscribing for a periodical which will interpret scientific medicine to the intelligent public. Moreover, opportunity is afforded for presenting to one's patients and one's friends a practical, entertaining Christmas gift, which will be renewed each month in the year. Already, in response to a previous announcement, hundreds of subscriptions and numerous letters of commendation and congratulation have been received at the headquarters of the Association. The remittance for the trial subscription to *Hygeia* may be added to that for THE JOURNAL by inserting the name *Hygeia* on the slip and adding one dollar to the check covering annual subscription to THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

SMALLPOX: A TEST OF CIVILIZATION

The marked increase in smallpox in recent years all over the civilized world is one of a group of facts that have disquieted many observers. Smallpox is a preventable disease, the first of the infectious diseases demonstrated to be preventable by inoculation. The evidence is so clear, so unmistakable and so convincing that it is a perpetual wonder that opposition can raise its head. But indifference to the protective value of vaccination and even definite hostility to its practice are today exceedingly common.

Neglect of vaccination, and its concomitant, the increase of smallpox, is but one of several striking manifestations of the breakdown of authority in the modern world. No longer do the mass of mankind receive submissively their opinions from the educated and informed. For better or worse they are attempting to form their own opinions and to act for themselves. The age of pure reason, however, has not yet dawned. Too often opinions are based on prejudice, on chance experience, on a persuasive but selfishly interested tongue, on the advertising exigencies of newspapers, on the dictum of a demagogue. To a large extent, this has been true always and everywhere; but what now disturbs many careful students of civilization is the widespread disposition to resent all attempts at direction by the better trained and better educated members of the community. In many places and on many subjects simple advocacy of a cause by the "intelligentsia" has been sufficient to rouse bitter antagonism on the part of the "proletariat." Seemingly few people nowadays want to accept advice or to regard anything as proved unless it has come within the scope of their own experience. But a state of chaos is certainly not the most comfortable state of human existence, and we trust not the final one.

In the general inclination to kick over the traces and to distrust the knowledge and the disinterestedness of every one but oneself, public health matters have not escaped. Vaccination is resorted to only if one happens to feel like it. Duty to one's associates or to the general public may go hang. This may be a transient mood or it may be a symptom of serious disease in the body politic. One thing is certain: The fact itself must be faced. If the time is going or has already gone when compulsion of the many by the few is possible or even when the many are willing to accept the counsel of the few, the only course open is the education of public opinion. If health regulations along with other governmental measures cannot be accepted on the word of the best informed, then the alternative is to persuade the mass of the people of the desirability of such regulations.

It is not to be believed that civilization will throw overboard, without a struggle, its hard-won gains. Already in several states in this country battle has been joined with the forces of prejudice and ignorance.

A vigorous campaign of education is in order on the vaccination question. The smallpox situation is not too reassuring, the mild form of the disease which has mostly prevailed in the United States in recent years is being supplemented in certain localities by a more virulent type of infection. Last year Kansas City was visited by a severe outbreak; now Denver is suffering from a visitation of highly fatal smallpox. According to the reports of the U. S. Public Health Service for the week ending October 28, there were 57 cases and 17 deaths from smallpox in Denver as compared with 55 cases and 0 deaths in the rest of the United States. For the week ending November 11 Denver had 72 cases and 21 deaths; the outbreak is evidently highly virulent. There is no reason for supposing the virulent type of the disease to be any less contagious than the mild type. In the interest of humanity it is to be hoped that a calamitous object-lesson on a yet larger scale may not be the only means of bringing about more general vaccination. It is possibly true that hereafter important public health measures can be carried out, not on the counsel of experts but on the basis of a majority vote. Those who say civilization is on trial may be right, and it may be necessary to use all our resources to educate the majority of the people, in order to avoid slipping back into the Dark Ages. But there ought to be less costly methods of convincing the people of this country of the value of vaccination than a general outbreak of virulent smallpox.

THE EFFECTS OF DUST INHALATION

There are so many dusty trades and smoky cities that pneumoconiosis is a subject of more significance than its literature would indicate. Recently there has been a greatly increased interest in the matter of the effects produced by the inhalation of dust, with numerous investigations by both the statistical and the experimental methods. This awakened interest has been shared by those having to do with industrial hygiene and by students of tuberculosis, who have commonly approached the subject from different directions. Clinical and statistical observations seem to indicate that the effects of dust inhalation depend chiefly on the character of the dust, and secondarily on the duration of the exposure. It has been suggested that the most injurious type of dust is one with hard, sharp cornered and insoluble particles; hence silicious dusts, such as are present in granite quarries and certain sorts of mines, are particularly harmful. Occasionally the chemical character of the dust is more important than its physical nature, as exemplified by the arsenical and cobalt dusts, which are believed to cause serious inflammatory changes and even cancer in the lung. At the other end of the scale come most organic dusts, as vegetable and animal fibers from the textile trades, which seem not to affect the lungs at all, although they may cause trouble in the upper respiratory passages. The harmlessness of cement dust is well testified by the very existence of workers exposed to the tremendously dusty atmosphere that occurs in and about cement plants. Also, the relatively innocuous nature of coal dust is shown by the commendable mortality figures of certain American cities, as well as by the commonly quoted statistics on the freedom of coal miners from pulmonary disease. Indeed, coal dust has been administered therapeutically by inhalation in the treatment of tuberculosis, and authors have reported a higher tuberculosis mortality rate among miners' families than among the miners themselves.

Landis [1] says that while silica dust may bring about a complete crippling of the worker in as brief a period as from two to eight years if the exposure is sufficiently intense, coal dust, even with marked exposure, usually takes from twenty to thirty years to produce changes sufficient to cause evident symptoms. It has even been urged that the mild fibrosis produced by coal dust and soot serves as a defensive barrier to the spread of human pulmonary tuberculous lesions, a theory that will secure ready endorsement by the chambers of commerce of our sootiest cities. The great trouble with much of our statistical evidence on the influence of dusty trades on tuberculosis lies in the difficulty in distinguishing clinically between chronic pulmonary tuberculosis and pure pneumoconiosis. Landis comments on the fact that, although certain forms of dust produce as definite and as characteristic changes in the lungs as do bacteria, the disease pneumoconiosis rarely, if ever, figures as such in our morbidity or mortality returns. It is usually disguised under some other term, as chronic bronchitis, asthma, pleurisy or tuberculosis. There can be no doubt that in a considerable percentage of cases a diagnosis of pulmonary tuberculosis is made when in reality the condition is a pure pneumoconiosis. This is to be ascribed to the fact that the symptoms and physical signs are frequently identical, and too much is taken for granted.

An additional factor that is too often lost sight of is the influence of the trade process. A man in stating his occupation will almost invariably give the general designation, as hatter or potter. In most occupations there is a great diversity of processes. Some of these processes involve no risk of any kind; in others there may be a distinct industrial hazard. Still another factor that is often neglected is a knowledge of exposure to tuberculosis in the home. In any considerable group of workers, no matter what the occupation may be, it will be found that there is evidence of existing cases of tuberculosis in their immediate families. In such cases it would be difficult to state whether the worker became infected because of his occupation or because of exposure to the disease in his home. Finally, it is urged that any study of the influence of occupation on the causation of disease should include a knowledge of

1. Landis: Pneumokoniosis and Tuberculosis, with Special Reference to Both Diseases in Potters, Am. Rev. Tubere. **6**: 766 (Nov.) 1922.

the conditions under which the workers live. Thus, on looking into a series of cases of supposed tuberculosis occurring in potters, it was found that in about one fourth tubercle bacilli could not be found, and in one third there was a history of exposure to tuberculosis. This author supports the view that pneumoconiosis is not necessarily detrimental, by finding that when tuberculosis is superimposed on this condition it usually manifests a chronic, nontoxic form. The presence of a marked fibrosis in these cases would seem to argue in favor of its rendering the lungs less susceptible to the tubercle bacillus, rather than increasing the susceptibility. In the case of potters it seems to be true that the tuberculosis is not likely to develop until after many years in the trade, and when it does develop, that it is frequently of a latent type. On the other hand, the evidence that silicosis, in the great majority of instances, is associated sooner or later with tuberculosis, is undoubtedly true.

There is a widespread belief that calcareous dusts, far from being harmful, have a distinctly protective influence on tuberculosis. Fisac [2] reports that among 40,824 deaths from tuberculosis, only seventeen, or 0.41 per cent., were in lime and gypsum burners. He also asserts that among 400 employees in a gypsum factory no death from tuberculosis occurred in seventeen years. There is so much similar evidence, that inhalation of lime dust, or residence in or about lime kilns, has been recommended as a therapeutic measure in tuberculosis. Gardner and Dworski [3] have studied, in guinea-pigs, the effect of inhalation of marble dust, as present in cutting operations, and have found that the calcium carbonate particles are readily absorbed, presumably as the bicarbonate, and hence produce no injurious effects, but the silicious particles which are also present may be abundant enough to cause harm. Experiments by Willis [4] emphasize the importance of the time factor, for he found that guinea-pigs that were made to inhale coal dust in large amounts at frequent intervals for a year did not accumulate as much coal dust or fibrosis in their lungs as other animals that had lived two years under laboratory conditions without special exposure to dust. This author believes that there is probably some basis for the contention of Beattie, Haythorn and others that the fibrosis which develops in response to the presence of certain dusts would tend to limit the spread of the infectious process and should in that sense be regarded as protective. But the converse is equally true: namely, that the fibrosis would also tend to focalize and to hold bacilli because lymph drainage would be interfered with. As a matter of fact, there is less dust in the lungs of animals exposed to coal dust, less reaction to the dust, and less marked difference in the extent of tuberculosis between the dusted and nondusted lung than one might with some reason expect to find.

Apparently, we are now securing much clinical, statistical and experimental evidence on the influence of inhaled dusts, correlated to a degree which has not previously existed, and which promises to put the entire matter on a definite footing without the uncertainties that formerly were the chief characteristics of this topic. We still need especially more reliable statistics of pulmonary conditions in the workers in dusty trades in which the presence or absence of active tuberculosis is accurately determined. Only in this way can we surely decide whether our present surmises are correct, and so determine the necessity of expensive and difficult avoidance of the dusty atmosphere of life in industrial communities.

2. Fisac, quoted by Maendl: Ztschr. f. Tuberk. **35**: 184, 1921.
3. Gardner, L. U., and Dworski, N.: The Relatively Early Lesions Produced by the Inhalation of Marble Dust, Am. Rev. Tuberc. **6**: 782 (Nov.) 1922.
4. Willis, H. S.: Studies on Tuberculous Infection, IX, Am. Rev. Tuberc. **6**: 798 (Nov.) 1922.

THE ETIOLOGY OF RICKETS

So long as it is true that the complete eradication of rickets would do away with much bone deformity, improve the physique, lower the infant mortality, and (what has been called most important of all) improve the teeth of the people in many countries, the etiology of the disease is well deserving of the most persistent consideration. The recent enormous activity in the study of vitamins and the consequent consideration of deficiencies in diet as a cause of disease have served to focus attention more fixedly on the problem of rickets, "a disorder which may exist without symptoms," and which is correspondingly difficult to study. The literature on the subject has become abundant, and has been reviewed from time to time in THE JOURNAL. Rickets formed a theme for discussion at the Glasgow Meeting of the British Medical Association in July,[1] at which the problem and the current findings were critically debated. The unbiased reader of the proceedings cannot fail to be impressed by the conflict of the views expressed. This feature alone should warn us to keep an open mind in a matter of such widespread national hygienic importance.

The opinion of one group of investigators—particularly in America—who have depended largely on animal experimentation for their data has lately been formulated to include at least three dietary factors in the development and normal metabolism of the skeletal tissues.[2] These are the phosphorus and calcium content, and the content of the organic substance provisionally designated as the antirachitic substance, although this is not regarded by its proponents as an entirely satisfactory term, since the substance is not preventive of rickets in the sense that the antiberiberi substance and the antiscorbutic substance are respectively preventives of beriberi and scurvy. The organic substance or vitamin under discussion and represented

1. Discussion on the Etiology of Rickets, Brit. M. J. **2**: 846 (Nov. 4) 1922.
2. McCollum, E. V.: The Newer Knowledge of Nutrition, New York, the Macmillan Company, 1922, p. 309.

by cod liver oil may exert an antirachitic effect, but so also may phosphorus or calcium, depending on the peculiar constitution of the diet. According to this view, then, rickets is not a deficiency disease in the same sense as is beriberi, but involves at least three etiologic factors, disturbances of the ratios among which will affect the structure of the bones.

Mellanby,[3] in England, frankly regards rickets as a disease accompanying growth, and due primarily to defective feeding. To him the rickets-producing diet is "unbalanced" in that it contains too little of those foodstuffs responsible for the proper calcification of bone, and too much of those substances responsible for the growth of tissue, the latter components being either neutral or actually antagonistic to the deposition of calcium phosphate in the growing bony matrix. Among the latter group Mellanby lays stress on the cereals, which he regards as the worst offenders in the rachitic diet. His contention is that these carbohydrate foods increase the laying down of fat and tissues generally, and that by thereby making greater demands on the calcification, any tendency of this process to lag behind is only increased when the cereal intake becomes greater.

The hygienic theory of the etiology of rickets, admitting the necessity of an adequate supply of essential nutrients, postulates additional environmental factors that make for physical well-being. Broadly speaking, they may be designated as climatic. The influence of sunlight has lately been evaluated in convincing ways, yet it has never been completely dissociated from fresh air. Light and fresh air are antagonists of lethargy. Thus the problem of exercise and the deleterious effects of confinement may come into play.

It is to some extent the conflict of opinion and seemingly irreconcilable facts and fancies that has heartened Findlay [4] of Glasgow to continue his championship of the possibility of infection as an etiologic factor. Somehow or other, he concludes, the disease is associated with confinement. Whether this is due to want of fresh air, lack of exercise, or absence of the sun's rays, or because confinement, overcrowding, and bad hygiene, in general, favor the development of some virus, it is impossible to say. It would appear, according to Findlay, that only by enlisting the participation of some virus can the geographic and social distribution, as well as the age and seasonal incidence of the disease, be interpreted. Hence he urges that the idea of rickets being of the nature of an infection should be more seriously entertained and made the basis of experimental considerations. Noël Paton [5] has frankly summarized the situation by admitting that the real cause of rickets is not known to us any more than it was to Glisson in 1650, or even to Soranus Ephesius in A. D. 100. There is sanity in his plea that the workers in this field of research combine and devise and carry out a definite plan of campaign, refraining from theories until the facts have been adequately accumulated.

3. Mellanby, E.: Discussion on the Etiology of Rickets, Brit. M. J. **2**: 849 (Nov. 4) 1922.
4. Findlay, L.: Discussion on the Etiology of Rickets, Brit. M. J. **2**: 846 (Nov. 4) 1922.
5. Paton, D. N.: Brit. M. J. **2**: 854 (Nov. 4) 1922.

Current Comment

EPINEPHRIN AND MUSCULAR EXERCISE

Most of the recent investigators of suprarenal function have denied to epinephrin the physiologic importance with which it was at first accredited. Thus, there is no real justification for the statement that it is responsible for maintaining arterial pressure and the tonus of the blood vessels at a normal level. Some students have even gone so far as to suggest that epinephrin is merely an excretory product.[1] As an alternative to the abandoned view of a more or less continuous contribution of this suprarenal product to normal circulatory efficiency, the theory of its occasional secretion as a sort of reserve mechanism in times of stress has been proposed. The progress of the vigorous debate to which this has given rise has been reported from time to time in THE JOURNAL.[2] The chief criticism of the engaging views championed by Cannon regarding the performance of the suprarenals in times of emotional excitement has centered in the contention that the proof of increased secretion under such conditions has not been conclusive. Somehow the possibility that epinephrin has at least an emergency function in some way or other persists in the minds of physiologic investigators. The newest exponents are Hartman and his co-workers [3] at the University of Buffalo. Their experiments on animals have indicated, in harmony with the belief that epinephrin increases the working power of a fatigued muscle,[4] that it may also facilitate the work of the contractile tissues at earlier periods. According to the Buffalo physiologists, epinephrin is actually liberated during muscular exercise. They assert that the maximal output of epinephrin reached depends on the intensity and duration of the exercise. After the exercise ceases, the increased output of epinephrin persists usually for a few minutes, and after vigorous exercise of long duration, sometimes for a few hours. The increase is gradually diminished until it disappears altogether. There is considerable individual variation in the after-secretion. Hartman also believes that the "warming up" process which is used as a preliminary to athletic contests undoubtedly starts the increased secretion of epinephrin. This might account, at least in part, for the better results obtained after "warming up" than before. Likewise, he assumes that the improvement accompanying "second wind" may be due

1. Gley and Quinquand: J. de physiol. **17**: 807, 1918.
2. Is Epinephrin Indispensable to Life? editorial, J. A. M. A. **73**: 192 (July 19) 1919; The Debated Theories of Suprarenal Function, ibid. **74**: 326 (Jan. 31) 1920.
3. Hartman, F. A.; Waite, R. H., and McCordock, H. A.: The Liberation of Epinephrin During Muscular Exercise, Am. J. Physiol. **62**: 225 (Oct.) 1922. Hartman, Waite and Powell: Am. J. Physiol. **60**: 255, 1922.
4. The literature on this feature is reviewed by Gruber, C. M.: Endocrinology **3**: 145 (April-June) 1919.

partly to an increase in the epinephrin output. The physiology of exercise has long been waiting for a tenable explanation of some of these well attested phenomena of athletic performance. Whether the present hypothesis will suffice remains to be seen.

CLUTTERING UP PHARMACEUTICAL NOMENCLATURE

On another page of this issue[1] will be found a report of the Council on Pharmacy and Chemistry explaining why "Esterol" has not been admitted to New and Nonofficial Remedies. Esterol is Frederick Stearns & Co.'s proprietary name for benzyl succinate. The product per se is unobjectionable. The fundamental objection to Esterol and the chief reason for its nonadmission to New and Nonofficial Remedies is its name. A multiplicity of names for any one medicinal substance is against the interests not only of scientific prescribing, but also of public welfare. Many of our readers will remember that when acetanilid was first introduced under a thousand and one names, cases were reported in medical literature of physicians calling for acetanilid under two or more names in the same prescription! More recently there was the ridiculous duplication of names for hexamethylenamin (Urotropin, Cystogen, Aminoformin, Uritone, Urisol, Cystamin, etc.), and later yet the even greater duplication in the case of phenolphthalein (Exurgine, Probilin, Prunoids, Laxine, Phenolax Wafers, Laxaphen, Phenalein, Thalosen, Laxothalen Tablets, etc.). Had Frederick Stearns & Co. been content to market their brand of benzyl succinate under the descriptive name, "Benzyl Succinate (Stearns)," the product, so far as the name is concerned, would have been acceptable to New and Nonofficial Remedies. Such a name would give the firm putting out the product all the legitimate protection that a firm should desire, while at the same time giving the physician who might wish to prescribe the product full information about its composition.

QUACKERY THRIVES ON IGNORANCE

"No laws will ever be able to prevent quackery, while people believe that the quack is as honest a man, and as well qualified, as the physician. A very small degree of medical knowledge, however, would be sufficient to break this spell; and nothing else can effectually undeceive them. It is the ignorance and credulity of the multitude, with regard to medicine, which renders them such an easy prey to every one who has the hardiness to attack them on this quarter. Nor can the evil be remedied by any other means but making them wiser. The most effectual way to destroy quackery in any art or science is to diffuse the knowledge of it among mankind."

This might have been written in 1922 apropos of the founding of the new lay journal by the American Medical Association. But it was not. It was written by a physician in London in 1783.

1. Esterol Not Admitted to N. N. R., Propaganda Department, page 2102.

Insanity in England.—At the end of 1921, the board of control reported 123,714 insane persons under care in England and Wales, an increase of 3,370 over the number recorded at the beginning of the year.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Dr. Welch Elected Malaria Chief.—At the annual meeting of the Southern Medical Association in Chattanooga, Tenn., Dr. Samuel W. Welch, Montgomery, state health officer of Alabama, was elected chairman of the National Malaria Committee.

Hospital News.—The Pellagra Sanatorium, Columbia, owned by Dr. John F. Yarbrough, was totally destroyed by fire, November 16, it is announced. The patients were all saved. Some daring rescues were made by the nurses, as the conflagration spread rapidly through the building, which was filled with patients on both floors. The loss is estimated at between $35,000 and $40,000.

CALIFORNIA

Physician's License Revoked.—According to report, the district court of appeals of San Francisco, November 23, upheld the revocation by the state board of medical examiners of the license of Dr. John Lafayette Berry (also known as "Bloodless Berry" and "Phenomenal Lafayette"), a physician of Newman, for unprofessional conduct. According to the court, he advertised a bloodless surgery system under an assumed name in violation of the medical practice act. Berry's license was revoked in 1919 in California; in 1911 in Oklahoma, and in 1910 in Texas, according to reports.

Hospital News.—Construction work on the children's wing of the Cottage Hospital, Santa Barbara is practically completed. This wing was made possible by the generosity of Mrs. William Bliss, who donated $50,000.——A tuberculosis hospital with accommodations for 200 patients will be established on a 170 acre site near Napa, to be known as the Atlas Peak Sanatorium. A company was recently incorporated for $300,000, with Dr. Charles H. Bulson, Napa, as chairman. Construction work will be started in the spring, it is announced.——A new community hospital will be erected in San Antonio with the $75,000 donated by Mrs. James L. Paul for a new hospital. The institution will be named the San Antonio Community Hospital, instead of the Paul Memorial Hospital, as previously decided. The first unit will have a capacity of from sixty to seventy beds.

COLORADO

Smallpox in Denver.—From Jan. 1 to Nov. 18, 1922, 602 cases of smallpox, with 190 deaths, have been reported in Denver. During the same period, 369 cases, with four deaths, were reported for the remainder of the state. Cases of smallpox have occurred in the state of Colorado with a fair degree of regularity since 1917, but no deaths were reported until 1920. The situation is one which is causing great concern to the state health authorities, particularly on account of the sentiment against vaccination in certain quarters. Passed Asst. Surg. Thomas Parran, Jr., of the U. S. Public Health Service, has recently been sent to Denver to assist the state authorities in controlling the epidemic.

DELAWARE

Hospital News.—A three-story addition is nearing completion at the nurses' home of the Delaware Hospital, Wilmington.——A Catholic hospital will be erected for the Sisters of St. Francis at Wilmington, at a cost of $200,000, it is announced. The site for the building will cost $30,000.

DISTRICT OF COLUMBIA

Personal.—Dr. Anna E. Rude, Washington, gave an address before the second annual conference of health officers and public health nurses, at Lansing, Mich., December 7, on "Maternal and Infant Hygiene under the Sheppard-Towner Act."——Dr. William B. Johnston, Washington, sailed on the White Star liner *Cretic*, November 11, for Europe.

Health Department Budget.—The budget for the fiscal year, 1924, submitted to Congress by the President, provides $217,385 for the health department of the District of Colum-

bia. This is an increase of $8,845 over the provision for the previous year. The appropriations recommended include $40,000 for the prevention of contagious diseases in the District of Columbia; $6,500 for maintenance of disinfecting service; $2,000 for enforcement of the act providing for drainage of vacant lots; $1,000 for maintenance of a chemical laboratory, and $8,000 for dairy farm inspection. The appropriations covering the salaries and expenses of the personnel of the District of Columbia health department complete the budget.

FLORIDA

Foreign Language Lectures.—Dr. Gaetano Bottaro, Genoa, Italy, formerly of Brooklyn, delivered a lecture on "Prophylaxis and Cure of Cancer" at the Italian Club, Tampa, November 17. This was the first of a series of lectures on cancer that will be given at the Latin clubs in the native languages, under the auspices of the American Society for the Control of Cancer.

ILLINOIS

Illinois Admitted to Birth Registration Area.—It has been announced from Washington that Illinois has at last been admitted to the United States birth registration area, through the efforts of Dr. Isaac Rawlings, state health commissioner.

New Home for Medical Society.—The Peoria Medical and Surgical Society has purchased the Holly Dancing Academy on North Madison Street, Peoria, and will move to the new location early in the new year, assuming actual possession next May. The association has been formally incorporated with Drs. Peter F. James, Fred C. Walker, J. D. Jennings, Kline M. Richardson, Harlan W. Long, W. B. Whipple and Louis Schwambach as directors. The association was formerly known as the Peoria Clinic.

Reciprocal Relations Restored.—Following reorganization of the medical examining board of the state department of registration and education, under Director A. M. Shelton, reciprocal relations have been restored between Illinois and the states of Pennsylvania, Ohio, California and Kentucky. These states canceled reciprocal relations some months ago, when charges of irregularities were made against William H. H. Miller, former director of the department, who was removed from office by the governor.

Chicago

Army Physicians Elect.—At the annual election of the medical post of the American Legion, at the Army and Navy Club, recently, Dr. P. J. H. Farrell was elected commander; Dr. Joseph E. Rowan, vice commander, and Dr. Louis Rudolph, finance officer.

Hospital Wins in Will Controversy.—The supreme court of Illinois, in refusing a rehearing of the case concerning the will of Charles E. Haines of St. Charles, has brought to a close the fight for possession of a $600,000 estate brought by relatives of the deceased. Mercy Hospital, Chicago, which under the will was given two thirds of the estate, will now receive its share of the funds.

Narcotic Victims to Go to Federal Prison.—Capt. John Boddie, assistant United States district attorney in charge of narcotic law prosecutions, recently requested Judge Evans of Chicago to send all drug addicts convicted in that district to Fort Leavenworth, Kan., instead of Cook County Jail or other jails in his jurisdiction, as has been the custom. This action was taken because of better facilities at the federal penitentiary for the treatment of addicts. Accordingly, Judge Evans sentenced the next two men convicted of violation of the Harrison Narcotic Law to one year and a day in Leavenworth.

INDIANA

Hospital Sold.—The Protestant Deaconess Hospital, Indianapolis, has been purchased at a cost of $120,000 by M. J. Tibbs and D. L. Rose. The hospital will be enlarged and creditors' claims will be paid from a fund of $40,000 created by the sale. Drs. Thomas B. Noble, Sr., and Thomas B. Noble, Jr., will act in a supervisory and advisory capacity.

Personal.—Dr. Erwin C. Garber, Dunkirk, has been freed of the charge of malpractice brought against him by Mrs. Osborne of Muncie.——Dr. James H. Taylor, Indianapolis, has resumed his work in pediatrics after an absence of several months in Europe and the Orient.——Dr. William R. Phillips, Orange, was elected at the November election to the state legislature.

KANSAS

Free Psychiatric Clinic.—Dr. Karl A. Menninger, professor of abnormal psychology in Washburn College and of criminology in the Washburn Law School, Topeka, and president of the Kansas State Mental Hygiene Society, recently opened a free clinic for nervous and mental diseases at Lawrence. He has appointed to assist him Dr. Arthur W. Clark, city health officer, as resident medical director, and Drs. George W. Jones, Eugene P. Sisson, Joshua R. Bechtel, Arthur J. Anderson, Harry L. Chambers and M. L. Post, all of Lawrence.

KENTUCKY

Hospital News.—The Ashland General Hospital is now under the supervision of Miss Lawrence, the Sisters of St. Francis having left the institution to take charge of a new hospital in Toledo, Ohio.——A new addition is practically completed for the Moseley Hospital, Henderson, of which Dr. Moseley is medical director.——Dr. John T. Boldrick will erect a hospital building at Lebanon, at a cost of about $25,000, it is announced.

LOUISIANA

Hospital Projects in New Orleans.—The Sisters of Charity of St. Vincent de Paul will spend $750,000 for an addition to the Hotel Dieu, it was recently announced. A six-story addition will be erected that will double the capacity of the institution.——The new building of the Eye, Ear, Nose and Throat Hospital has been opened. Additional buildings will be erected in the near future.——The Presbyterian Hospital will erect a new building in the rear of its present plant, at a cost of approximately $1,000,000.——Final plans have been drawn for the addition to the Touro Infirmary, which will be erected at an estimated cost of $500,000.——The Baptist Hospital is also contemplating additional buildings. Nearly $1,000,000 was collected some years ago in a campaign conducted by the Southern Baptists. Part of this sum will be used for the new building, which it is expected will be completed some time during 1924.

MAINE

Personal.—Dr. Williard H. Bunker, Calais, has been appointed medical examiner of Washington County.——December 3, Governor Baxter appointed Dr. William G. Chamberlain, Fort Fairfield, to the board of registration of medicine to succeed Dr. Mary F. Cushman, Farmington, who has gone to Central Africa as a missionary.——Dr. Frank W. Searle, Portland, secretary of the board of registration of medicine, is ill. His work as secretary is being cared for by Dr. Adam P. Leighton, Portland.

MARYLAND

Founders' Day at University.—The one hundred and fiftieth anniversary of the University of Maryland, Baltimore, will be celebrated by the medical alumni, December 18, at a banquet at the Rennert Hotel. The school was organized in 1807 as the College of Medicine of Maryland. In 1812, it became the University of Maryland School of Medicine. In 1913, it took over the Baltimore Medical College. In 1915, the College of Physicians and Surgeons of Baltimore was merged with it and the present title assumed. Stereopticon slides covering its entire history and growth will be shown. The occasion will in future be an annual event.

Personal.—Dr. Joseph Earl Moore, Johns Hopkins University, Baltimore, addressed the Rochester Medical Association, Rochester, N. Y., November 22, following a dinner given in his honor by the society.——Drs. Warfield T. Longcope, Johns Hopkins University, and Hugh H. Young, Baltimore, gave addresses before the New York Academy of Medicine, recently.——Dr. Myron G. Tull, Camden, N. J., has been appointed resident physician at the Sydenham Hospital, Baltimore.——Dr. J. Colt Bloodgood, Johns Hopkins University, Baltimore, was the guest of the Academy of Medicine of Toledo and Lucas County, December 8. Following the banquet in his honor, Dr. Bloodgood gave an address.

MASSACHUSETTS

Alleged Abortionist Forbidden to Practice in State.—It is reported that Dr. Alfred D. Shea, Cambridge, entered a plea of nolo contendere, November 21, when arraigned in the superior criminal court, on the charge of performing an illegal operation. Dr. Shea was placed on probation for three years, it is reported, on condition that he shall not

again practice medicine in the state of Massachusetts. In May, 1912, Dr. Shea was convicted on a charge of criminal abortion and sentenced to a term of not more than ten years and not less than seven years in the state prison. He was pardoned by the governor and council in December, 1912, having served only six months of his sentence.

MICHIGAN

Detroit Roentgen-Ray and Radium Society.—At the annual meeting of the society Dr. Roland E. Loucks was elected president; Dr. Stone, vice president, and Dr. Howard P. Doub, secretary-treasurer.

Hospital News.—The Marquette Episcopal diocese has taken over St. George's Hospital at Iron Mountain. A new institution will be erected in the spring, it is announced.——The Detroit Department of Health has been authorized to construct another unit to the Detroit General Hospital, to provide 250 beds for tuberculous patients. Altogether $1,000,000 is to be expended. This will include a new power plant and a tunnel system for heating purposes.——The mayor of Calumet will open the new Soldiers and Sailors' Memorial Hospital in that city, Jan. 1, 1923.

MINNESOTA

Appropriation for Tourist Parks.—The state board of health will petition the next legislature for an appropriation of $20,000 for the purpose of regulating the tourist camps and summer hotels in the state.

MISSOURI

School and Health Week.—December 3-10 was observed as School and Health Week in the state, in accordance with a joint and concurrent resolution adopted by the legislature in 1921. Governor Hyde strongly indorsed the movement. The state department of education, the state board of health, the Missouri posts of the American Legion and the Rotary clubs cooperated with the Missouri Tuberculosis Association in observance of the week.

NEBRASKA

Prison Sentence for Physician.—It is reported that Dr. George A. Angus, Omaha, was recently convicted on a charge of violating the Harrison Narcotic Law and sentenced to serve one year in the federal prison at Leavenworth, Kan.

Personal.—Dr. Leroy Crummer has returned from Europe. ——Dr. A. J. Carlson, professor of physiology, University of Chicago, spoke on "Recent Advances in the Physiology of the Alimentary Canal," before the Lancaster County Medical Society at Lincoln, recently.——Dr. Emory Ira Whitehead, Holdredge, has been elected to the state legislature by a large majority.

NEW HAMPSHIRE

Personal.—Dr. John M. Gile, Hanover, has succeeded President Hopkins of Dartmouth College, as chairman of the state workmen's compensation commission which was created by the last legislature.

NEW JERSEY

Midwives Fined.—It is reported that Florence Michalusek, a licensed midwife, was fined $200 for practicing medicine without a license; also that Mary Balacs and Alexiandrio Sudnikowicz were fined $200, November 13, for practicing midwifery without a license.

Epidemic of Typhoid.—Five persons are dead and ninety-five seriously ill with typhoid fever at Franklin Furnace as the result of an epidemic, declared by officials due to seepage of unfiltered water used for fire fighting into the town's drinking water mains. The residents of the town have been inoculated with antityphoid vaccine by state health inspectors and the town is quarantined until the epidemic can be controlled.

NEW YORK

Personal.—Dr. William J. Cruikshank, Brooklyn, has been appointed consulting cardiologist to the Broad Street Hospital, New York.——Miss Jessie G. Cole, Albany, has been appointed nutritionist in the division of maternity, infancy and child hygiene of the state department of health.——Dr. Clarence E. Coon, Syracuse, professor of orthopedic surgery at the Medical Department of Syracuse University, has been appointed consulting orthopedic surgeon of the state department of health.

Society News.—At the annual meeting of the New York Academy of Medicine, December 7, the following officers were elected for the ensuing year: president, Dr. George David Stewart; vice president, Dr. Samuel A. Brown, and trustee for five years, Dr. L. Emmett Holt. The address of the evening was delivered by Dr. J. E. McCartney of the University of Edinburgh, Scotland, on the subject of "Primary Pneumococcal Peritonitis."——At the annual meeting of the Medical Society of Queens County, Long Island, held at Forest Hills, Dr. Charles B. Story, Bayside, was elected president and Dr. Joseph S. Thomas, Flushing, secretary-treasurer.

Radio News Service.—The weekly radio health talks broadcasted from Schenectady under the direction of the state board of health since last spring will be delivered in future by a number of the foremost scientists and public health leaders of the country. The first talk of this series was delivered, December 1, by Mr. Homer Folks, secretary of the State Charities Aid Association. December 8, Dr. Donald B. Armstrong of the National Health Council discussed "Personal Aspects of Disease Prevention." Dr. Haven Emerson, former health commissioner of New York City, spoke, December 15. Dr. Milton J. Rosenau, Walter B. James, Frankwood Williams, Livingston Farrand and Philip B. Van Ingen will deliver health lectures by radio later.

Hospital News.—Plans for the new state hospital at Marcy have been revised so as to provide for an addition, giving the institution accommodations for a total of 3,000 patients. The cost of this addition, added to that of the original plan for the main structure near Utica, brings the total expense for the institution to $7,000,000.——A private hospital will be erected by a syndicate of New York physicians at Seventy-Second Street and West End Avenue, it is announced. The building will contain 400 rooms, exclusive of ten large operating rooms. The cost of construction will be approximately $3,000,000.—— The mayor of New York recently issued a proclamation designating the week, November 27-December 3, as hospital week, during which the United Hospital Fund held its annual drive for a nonmunicipal hospital in New York.——The Carthage Hospital was recently opened to the public. A meeting of the Carthage Medical Society was held recently at the institution for the purpose of inspecting it.——The Mary Immaculate Hospital, Jamaica, Long Island, plans the erection of a building, to cost approximately $1,000,000.

New York City

Microscopical Society Exhibit.—The annual exhibit of the New York Microscopical Society was held, December 2, at the American Museum of Natural History. The exhibits were included under the heads of general biology, society exhibits, botanical, entomologic, mineralogic, polarized objects, photomicrographs and fifty-eight miscellaneous subjects.

NORTH CAROLINA

Personal.—Dr. Harry L. Brockmann, for the last nine months city physician of Greensboro, has resigned to associate himself with Dr. Burrus in the High Point Hospital. Dr. Burrus' partner, Dr. Hugh W. McCain, died recently ——Dr. Arthur de Talma Valk, Winston-Salem, has been elected president of the Eighth District Medical Society of North Carolina.

Hospital News.—The contract was awarded, October 31, for the women's building and refrigerating plant at the Morganton State Hospital at a cost of nearly $108,000. According to the terms of the contract, work is to be completed by Sept. 1, 1923. The women's building will have a capacity for 104 inmates, and will cost $74,000.——An addition to St. Peter's Hospital, Charlotte, is under construction at a cost of approximately $65,000.——All patients from Kenilworth Hospital, Asheville (a U. S. Public Health Service hospital) were ordered removed by December 1, to Memphis, Tenn.; Atlanta, Ga.; Lake City, Fla., and Otcen, N. C.

OHIO

Scarlet Fever Epidemic.—More than 387 cases of scarlet fever are reported from Cleveland and an epidemic is feared. Schools, churches and theaters in Chardon have been ordered closed until further notice.

Ophthalmologists Elect.—At the annual meeting of the Ophthalmological Club of Cincinnati, held recently under the presidency of Dr. Robert Sattler, the following officers were elected for the ensuing year: president, Dr. Derrick T. Vail; secretary, Dr. Robert C. Heflebower, and treasurer, Dr. W. E. Schenck. Dr. Martin H. Fischer was the guest of honor.

Experimental Mental Hygiene Clinic.—The board of directors of the community chest have authorized a fund of $15,000 for the establishment of an experimental mental hygiene clinic in cooperation with the College of Medicine, University of Cincinnati. Members of the faculty appointed to work out the details are: Drs. Julien E. Benjamin, Mark A. Brown, Otto P. Geier, Herman H. Hoppe, Benjamin K. Rachford, Thomas A. Ratliff and Dean Page.

Redwood Fined for Practicing Medicine.—Carakas Redwood, half caste Indian of Circleville, was fined $250 for practicing medicine without a license, November 25, it is reported. He pleaded guilty and, unable to pay the fine, was committed to the county jail. Correspondence was found in his apartment revealing that he had corresponded with Irving Henderson of Lancaster, whose body with those of his wife and four children was found, November 22, all having been presumably poisoned. A letter to Redwood written by Henderson, but unsent, and literature sent by Redwood to the poison victim, provided the clue for the prosecution.

OREGON

Personal.—Dr. Andrew C. Smith, Portland, a member of the state board of health since its inception, has submitted his resignation to Governor Olcott.——Dr. Henry Waldo Coe, Portland, has given to the city of Portland an equestrian statue of Theodore Roosevelt, which was unveiled, November 11. The statue is the work of A. Phimister Proctor and cost approximately $40,000.

PENNSYLVANIA

Health Commissioner to Retire.—It is reported that Col. Edward Martin, Harrisburg, state health commissioner, will retire when Governor Sproul leaves office. He is contemplating a tour of South America.

Scholarship Fund Oversubscribed.—The $3,000 scholarship fund established at the Pennsylvania State College by the Rehabilitation Club for the benefit of the sons and daughters of the men of the U. S. Veterans' Bureau now in training at the college has been oversubscribed.

Personal.—Dr. William W. Richardson, Erie, has again become the resident medical director of the Mercer Sanatorium, Mercer.——Dr. Helen M. Stewart, Chambersburg, was recently appointed a member of the board of health.——Dr. David S. Bordner, Palmyra, has been elected president of the board of health, to succeed Dr. Milton B. Fretz.

Medical Fraternity Honors War Veterans.—A bronze and granite statue commemorating the service and sacrifice of members of the Allegheny County Medical Society was unveiled and dedicated, November 30, in Schenley Park, Pittsburgh. Dr. Edward B. Heckel, presided; Dr. John J. Buchanan presented to the service men the memorial, which Dr. William J. McGregor accepted and transferred to the city of Pittsburgh. A report of the war committee was read, which showed that, in addition to 450 members of the society who entered the service when the United States declared war in 1917, many members of the organization were already at the front with the allied troops. Giuseppe Moretti (the sculptor) gave an address on "The Meaning of the Statue." The memorial is a female figure of bronze bearing the caduceus, and is mounted on a granite base, the face of which bears an inscription, while the sides are utilized for plates bearing the names of the honored physicians.

Philadelphia

Mary Scott Newbold Lecture.—The ninth Mary Scott Newbold lecture was delivered by Dr. Donald C. Balfour, Mayo Clinic, Rochester, Minn., at the College of Physicians, Philadelphia, December 6.

Temple University Physician Honored.—A dinner was given, December 8, in Garrick Hall, in honor of Dr. Romeo Franceschetti on the occasion of his joining the faculty of Temple University as assistant instructor of pathology and bacteriology.

University Gets Hunter Bequest.—A bequest of $200,000 for the establishment of a department of clinical surgery was ordered paid by trustees of the estate of Edward A. W. Hunter to the University of Pennsylvania, Philadelphia, by Judge Thompson in the orphans' court, November 28. The fund awarded the University will establish the "Agnew and Hunter Department of Clinical Surgery," in memory of Drs. D. Hayes Agnew and Charles D. Hunter.

WEST VIRGINIA

New Academy of Medicine.—Under the auspices of the Ohio County Medical Society, the Ohio County Academy of Medicine will be erected in Wheeling within a year, at a cost of about $75,000. Dr. Henri P. Linsz, Wheeling, was elected president at the recent election and Dr. A. McGregor, secretary. The membership of the new academy will include the 300 practicing physicians in the Ohio Valley.

WISCONSIN

Maternity Health Clinic Opened.—The Marinette County maternity and infant health center was opened at Crivitz, in November, with Dr. Mildred Van Cleve as physician in charge.

WYOMING

Personal.—Dr. William A. Myers, Casper, formerly of Lincoln, Neb., has resumed practice following the automobile accident last July which necessitated the amputation of his arm.

PHILIPPINE ISLANDS

More Lepers to Be Released.—A special board of examiners appointed by the Territorial Board of Health will visit the Kalaupapa Leper Settlement on the Island of Molokai to pass on the release of seventeen patients. Recommendations for their parole have been received from Dr. W. J. A. Goodhue, resident physician of Kalaupapa. This is the third time, since the use of the chaulmoogra oil treatment, that a board of examiners has visited the settlement, and it is stated that since its use in 1919 more than forty-four cures have been effected at Kalaupapa. Of the present patients who are up for parole, twelve have been confined at the settlement for more than twenty years.——The Kalihi Receiving Hospital at Honolulu, maintained for the confinement and treatment of less serious cases of leprosy, reports that more than 150 patients have been released since 1919.

CANADA

Public Health News.—Several meetings held recently under the auspices of the Toronto Board of Health have had as their purpose a consideration of the problem of feeble-mindedness as it affects Toronto. A committee was organized, with Dr. Risk as chairman and Dr. E. A. Bott as secretary, to go into the matter in detail. In the near future, a research committee composed of Dr. C. K. Clarke, Dr. George Anderson and F. N. Stapleford will compile a report relative to the situation. A presentation of the facts will then be made to the board of control and city council in an endeavor to further the solution of the problem of mental deficiency.——Branches of the Canadian Social Hygiene Council have recently been organized in Ottawa, Kingston, Peterborough, Newmarket, Orillia and Windsor. This makes a total of eleven social hygiene councils in Ontario. Early in the new year, extensive organization will be started in other provinces.——The laboratory of the city of Ottawa, with the staff and equipment, has been taken over by the Ontario Provincial Board of Health, and will be operated as a branch laboratory. Similar laboratories have been established at Fort William, Sault Ste. Marie, North Bay, Owen Sound, London, Peterborough and Kingston. Dr. F. L. Letts, D.P.H., will be director of the new branch laboratory at Ottawa.——A series of social hygiene meetings have been arranged by the Toronto Social Hygiene Council, to be given every Sunday night in a large church in downtown Toronto after the church services. Community health and recreation, community music, new educational possibilities and other subjects will be dealt with by well known speakers.

New Medical Bill.—At the opening of the house recently, an act to amend the revised statutes, respecting the Quebec Medical Act was brought forward. It sets forth, first, that the quorum of the Provincial Medical Board shall be of twelve members who will be authorized to establish a minimum tariff. It defines the practice of medicine as (1) the giving of medical consultations, whether remunerated or gratuitous; (2) the ordering or prescribing of medicine; (3) practicing midwifery; (4) examining or questioning sick persons for the diagnosing of the disease or for the purpose of selling medicine, and (5) treating disease of whatsoever

nature, medical or surgical, by administering, giving or selling medicine, by making use of mechanical, physical or chemical processes or of radiotherapy or of roentgen ray, with or without remuneration. There is a clause in the bill which forbids the keeping of an institute, private hospital, home for convalescents or sick persons, a maternity hospital or any establishment where consultations and treatments are given, without first obtaining permission from the lieutenant governor-in-council, which will be granted only on proof that the institution is under immediate professional supervision. The authorization granted may be revoked at the request of the College of Physicians and Surgeons. Penalties provided for violation of the law run from $50 to $300 and three months' imprisonment for third offenses. These penalties also apply to any person who assumes the title of doctor of medicine. It is also provided that "no person in the province other than a qualified and licensed physician and surgeon shall administer anesthetics except in cases where health or life may be endangered by too long a delay or by the impossibility of obtaining the services of a qualified practitioner."

GENERAL

United States Aids Earthquake Victims.—President Harding directed, November 16, that two cruisers proceed to Huasco, Chile, at once, with food, clothing and medical supplies for relief in the regions that have been devastated by the recent earthquake. Secretary Denby designated the cruisers *Cleveland* and *Denver*, which were ordered to proceed at once.

Radiological Society of North America.—At the annual meeting of the society, in Detroit, December 4-8, under the presidency of Dr. Albert Soiland, Los Angeles, the following officers were elected for the ensuing year: Dr. Rollin H. Stevens, Detroit, president-elect; Dr. Russell D. Carman, Rochester, Minn., president; Drs. Lloyd Bryan, San Francisco, Douglas A. Quick, New York, and Robert H. Millwee, Dallas, Texas, vice presidents, and Dr. Manly J. Sandborn, Appleton, Wis., secretary-treasurer.

Chemical Society Will Publish News Edition of Technical Journal.—*Industrial and Engineering Chemistry*, the technical journal of the American Chemical Society, announces an extension of its service in 1923. Besides the present journal, which will not be changed in form, there will be issued twice a month, on the 10th and 20th, a chemical newspaper, to be known as the *News Edition of Industrial and Engineering Chemistry*. This news edition is designed to carry current information, much of it nontechnical in character, and supplied to a large extent by the staff correspondents. The first issue will appear, Jan. 10, 1923.

Annual Congress on Medical Education, Licensure, Public Health and Hospitals.—The next annual congress on medical education, licensure, public health and hospitals will be held in the Florentine Room of the Congress Hotel, Chicago, on Monday, Tuesday and Wednesday, March 5, 6 and 7, 1923. This congress will be participated in by the Council on Medical Education and Hospitals and the Council on Health and Public Instruction of the American Medical Association, the Federation of State Medical Boards, the Association of American Medical Colleges, the American Conference on Hospital Service and the U. S. Public Health Service.

Smallpox in the Middle West.—Dr. Hugh Cumming, Surgeon-General of the U. S. Public Health Service, sounded a warning of the necessity of a general vaccination throughout the Middle West because of a widespread epidemic of smallpox. Unless prompt action is taken, a serious spread of the contagion is feared. He also intimated that there is danger of an outbreak of yellow fever in the South next summer unless every precaution is taken by health authorities in this section. Thousands of cases of dengue fever have been reported to the U. S. Public Health Service from Louisiana, Texas and other states, and the appearance of this disease usually presages the deadly yellow fever.

Art Instruction Courses.—A course of instruction in art as applied to medicine is now open to students in all four years at Johns Hopkins University, Baltimore. The work first deals with the exact study of plastic representation of medical objects of all kinds and later the study of diagrammatic drawings and sketches useful in taking medical histories or illustrating lectures with blackboard sketches. Instruction will also be given in the various technics suitable for medical illustrations intended for publication, such as halftone drawings in crayon, water color painting, line drawings in pen and ink, diagrams and charts for class demonstration. ——A similar course is offered at the University of Cincinnati, for which an increased appropriation has recently been made.

Child Welfare in Porto Rico.—Reporting on a year's survey of conditions affecting children in Porto Rico, the chief of the children's bureau, in the annual report, says that unemployment and underemployment are serious problems in the island, and have resulted in such poverty that many essentials in proper child care cannot be provided. The infant death rate in 1920 was 146 per thousand births, as compared with eighty-six in the United States birth registration area. The report also says that Porto Rico has made great progress in education and general development since it became part of the United States. Illiteracy has been reduced from 80 per cent. of the population 10 years of age and over, to 55 per cent., but school facilities still exist for only half the children of school age.

Provisional Mortality and Birth Figures for 1922.—The Department of Commerce announces that provisional figures compiled by the Bureau of the Census for the first six months of 1922 indicate higher death rates than for the corresponding six months of 1921. For the states compared, the death rate for the six months was 12.6 in 1922 as against 12 for the first six months of 1921. The highest mortality rate for the half year is shown for Maine (15.7) and the lowest for Idaho (8.2). These early figures forecast for 1922 a somewhat higher rate for the death registration area than the record low rate (11.6) for 1921.——The Department of Commerce also announces that provisional birth figures compiled by the Bureau of the Census for the first six months of 1922 indicate lower birth rates than for the corresponding six months of 1921. For the states compared, the birth rate for the first six months was 22.7 in 1922 as against 24.8 in 1921. The highest birth rate for the half year (30) is shown for North Carolina and the lowest (18.1) for Vermont. The 1921 rate for the birth registration area was 24.3.

Society News.—The first annual meeting of the Minnesota-North Dakota State Conference of the Catholic Hospital Association of the United States and Canada, was held in Rochester, Minn., December 5-6, under the presidency of Sister Madeleine, St. Mary's Hospital, Minneapolis.——A meeting of the Clinical Orthopedic Society of Rochester, Minn., will be held, December 15-16.——The annual meeting of the American Student Health Association will be held at Columbia University, New York, December 26, under the presidency of Dr. John Sundwall, professor of hygiene and public health, University of Michigan.——At the Mississippi Valley Conference on Tuberculosis, recently held at Milwaukee, three resolutions were adopted favoring (1) more general and extensive use of sanatoriums as training centers for rehabilitation of former service men, and more systematic health efforts; (2) better instruction in the schools, with courses for teachers in normal schools, and (3) continuance and extension of modern health crusades.——The next annual meeting of the American Gynecological Society will be held at Hot Springs, Va., May 21-23, 1923.——The Seaboard Medical Association of Virginia and North Carolina convened in New Bern, N. C., December 5-7, under the presidency of Dr. Joseph L. Spruill, Sanatorium.——The meeting of the Association for Research in Nervous and Mental Disease will be held in New York, at the Hotel Commodore, December 27-28, under the presidency of Dr. Walter Timme, New York. Dr. Douglas A. Thom, Belmont, Mass., will speak on the "Relation between Infantile Convulsions and Epilepsy."

Druggists Discuss Liquor and Narcotic Regulations.—Alcoholic liquor and narcotic drug regulations commanded a large measure of attention at the meeting of the National Drug Trade Conference, in Washington, D. C., December 5. The sale of medical supplies by the War Department without warranty as to kind, quality, or fitness was condemned.

New state legislation upon narcotic drugs should not be advocated, the conference advised the several organizations of which it is made up, until data more trustworthy than those now available have been accumulated, regarding narcotic addiction and narcotic drug control. At the same time, the proposed model state antinarcotic law formulated by the committee on narcotic drugs, of the Council on Health and Public Instruction, American Medical Association, with the active cooperation of representatives of certain drug interests, was referred to the organization members of the conference for consideration and report. The conference authorized its appropriate committee to appeal to the Commissioner of Internal Revenue to abolish the now compulsory signature of the patient or his agent on the back of the prescription,

to permit druggists to supply narcotics in original packages on physicians' prescriptions without registering as wholesale dealers, and to permit druggists to refill prescriptions containing codein and its salts.

The adoption of legal standards for whisky and brandy would, in the opinion of the conference, facilitate the enforcement of the National Prohibition Act by bringing such therapeutic agents within practicable reach of the Pure Food and Drugs Act of 1906, thus enabling the Bureau of Chemistry, Department of Agriculture, to cooperate better with the Prohibition Commissioner. The Committee on Revision of the Pharmacopeia was requested to consider the advisability of adopting appropriate standards for these articles.

The conference went on record as opposing the bill now pending, to remove the Prohibition Commissioner from the supervision of the Commissioner of Internal Revenue and the Secretary of the Treasury, and to make him answerable to the President alone. To prevent the promulgation of unwise and harassing regulations relating to the use of alcohol as a raw material, the conference appealed to the Commissioner of Internal Revenue to appoint an advisory trade committee, to be consulted before regulations are promulgated.

Surplus medical supplies have been sold by the War Department, it was reported, under conditions endangering public health and in violation of law. Sales were made by competitive bidding, "as is," the War Department assuming no responsibility for quality, character, condition, size, weight or kind, or fitness for purpose for which intended. A resolution was adopted urging that medical supplies in good condition be sold with customary guaranties as to conformity to lawful standards; that the sale of articles deteriorated but having a salvage value be limited to manufacturers prepared to recondition them prior to sale or to use them for manufacturing purposes; and that articles not known to conform to legal standards or to be fit for use, or susceptible of being made so, be condemned and destroyed.

LATIN AMERICA

Public Welfare Congress in Chile.—The Second Chilean Public Welfare Congress was held at Santiago, Dec. 7-10, 1922. Most of the problems discussed were related to hospital administration.

New Mexican Sanatorium.—Jan. 2, 1923, three of the buildings of the new sanatorium for newspaper men and their families near Mexico will be opened. The first sections to be completed are the administration, the medical and the maternity, the last being a gift of the oil companies.

Blood Tests for Schoolchildren at Nicaragua.—A recent governmental order requires all schoolchildren to submit health certificates from the public health laboratory at Managua on entering school. A similar laboratory is to be established at Granada to test blood and sputum.

Antiquack Campaign.—The Oriente y Mediodia School of Medicine and Surgery, Nicaragua, acting as a licensing board, has summoned all persons professing to practice medicine and not properly graduated to appear before the board to show their qualifications. Those failing to qualify will be prosecuted.

Public Health in Salvador.—Public health work in Salvador has shown satisfactory development in the last few years, as shown by the last report of the national public health service. In 1921, 153,724 people were vaccinated, as compared with 117,162 in 1920; 66,539 fecal specimens were examined for hookworm, as compared with 51,511 in 1920. Altogether, 191,936 examinations have been made from 1916 to 1921, 55 per cent. of which proved positive for hookworm. The first national board of health was organized in 1900, when a sanitary code was also adopted. The board was reorganized in 1920. A local board of health has been organized in every town.

Typhoid Spreading in Mexican Capital.—Dispatches from Mexico City state that the prevalence of typhoid there has begun to assume the proportions of an epidemic. Owing to the water famine, the city's sewers are in bad condition and sanitary conditions in the poorer quarters of the city are extremely bad. The water reserve held by the fire department has been placed at the disposal of the poor, and postal employees have been dispensing it through the fire hose. The hospitals are taxed to their utmost. Many foreigners are leaving the city. The chamber of deputies have voted to remove the mayor and aldermen from office because of their alleged failure to deal promptly with the situation. Most of the water obtained now is dirty, and hundreds of typhoid cases have been reported.

Public Health Nursing in Brazil.—Mr. Crittenden Marriott, special representative of the U. S. Public Health Service in charge of the exhibit now in progress in Rio de Janeiro, states that public health nursing as a profession in Brazil is only about 1 year old. Nursing in Brazil is on a low plane at present, a nurse not receiving the training or the respect due her position. Recently, at the request of Dr. Chagas, Mrs. Ethel Parsons was sent to Brazil by the International Health Board to organize and train a corps of public health nurses. Later, it was found advisable to bring others to assist Mrs. Parsons, and, accordingly, ten American and two English nurses were secured for this work. A training school has been organized, and thirty nurses and forty social workers have been engaged. Prospects are bright for the successful development of the work.

FOREIGN

Medical School Incorporates.—The Bristol Medical School has been incorporated with the University of Bristol. The Bristol Medico-Chirurgical Society has recently presented to the university the library of the society, comprising more than 15,000 volumes and valued at approximately $50,000.

Another Victim to Professional Roentgen-Ray Injuries.—The cable brings word that Professor Vaillant, director of the roentgen-ray laboratory at the Lariboisière Hospital at Paris, has had to undergo his thirteenth operation. His right forearm was amputated. The left arm was affected first, and after removal of the fingers the arm had finally to be exarticulated.

Tuberculous Patients to Colonize Hot Countries.—The French Academy of Medicine is discussing the establishment of great tuberculosis colonies in hot countries, and segregation of consumptives by all civilized nations in the way that lepers are now segregated. A plan has been put forward whereby all the civilized nations would combine for the purpose of turning huge tracts of land in Africa and Mesopotamia, into tuberculosis colonies. These colonies would be self-supporting, according to the plan, and would be established in conjunction with large irrigation schemes.

Conference of Cremation Officials.—The cremation authorities and members of the Cremation Society of England held a conference in London, October 26, for the purpose of discussing what deters the people from adopting cremation as a substitute for earth burial, and the methods by which information regarding the advantage of cremation might be brought before the public and its practice facilitated and cheapened. Sir Malcolm Morris was in the chair. Every speaker touched on the very slow progress which cremation has so far made. This was attributed to sentiment, apathy and the public's lack of knowledge as to what cremation means.

Russian Professors Stranded in Berlin.—One hundred Russian university and professional men, mostly scientists, some of them internationally famous, recently exiled from Russia by the soviet government, are in serious circumstances in Berlin, it is announced. The American Relief Administration may not spend its funds outside of Russia, and so cannot aid them. Local charity is housing and feeding them, but they lack sufficient clothing, shoes and money for the coming winter. An appeal has been made to Vernon Kellogg of the National Research Council, Washington, D. C., for $1,000 to provide some relief. This will average only $10 to each person. Princess Cantacuzene of Washington has already donated $500 and Dr. Kellogg $10, and he will undertake to receive the gifts and send personal receipts for them. Other donations are requested.

Memorials to the Profession.—The memorial at the Middlesex Hospital Medical School, London, to the students who lost their lives during the World War will be in the form of four stained glass windows in the university chapel of the four soldier martyrs—St. George, St. Alban, St. Martin of Tours and Joan of Arc. These windows were dedicated by the Bishop of London, November 1. Memorial tablets have been placed in the entrance and the new common hall of the medical school. These tablets and a portrait of Capt. John Fox-Russell, V. C., were unveiled and dedicated on All Saints' day, November 1, by Sir John Goodwin, who also formally opened the new common room.——The Council of the British Medical Association has decided that the memorial to members who fell in the World War shall take the form of a book of honor to be placed in the library, a memo-

rial tablet in the entrance hall and a small book to issue to relatives, describing the book of honor. F. G. Hallett, secretary to the Conjoint Examining Board of England, has undertaken to illuminate and superintend the engrossing of the book.——The *Medicina Contemporanea* reports that a statue of a local physician has been erected on one of the avenues of the city of Funchal, Madeira Islands. The physician thus honored is Dr. J. da Camara, Conde do Cannavial, who died in 1912 at the age of 83.——The *Riforma medica* calls attention to the subscription that has been opened by the medical faculty of the University of Modena to endow a foundation for experimental biology and therapy in honor of the memory of the late Prof. R. Luzzatto.——An imposing monument was recently unveiled by the medical faculty of the University of Toulouse in memory of the eminent research worker and professor of anatomy Charpy, who died in 1911.——The friends of the late Professor Guilleminot of Paris recently had a memorial bronze medal struck to present to his family. It is on exhibition at the Hôtel-Dieu Hospital.——A monument has been erected at Lamalou-les-Bains to the memory of Dr. F. Boissier, who was killed at the battle of Verdun.

Personal.—The *Medicina Ibera* relates that the National Academy of Medicine at Madrid has accepted the design offered by the sculptor V. Macho for the proposed monument to be erected in Madrid in honor of Prof. Ramón y Cajal. The design is horizontal—"to express tranquillity and repose." Two symmetrical fountains pour water into a large basin. In the midst of the basin, on a block of marble, Cajal is represented resting in a pensive attitude.——The Spanish Sociedad de Pediatria organized a course of lectures by Dr. Arquellada, the president, and at its conclusion the society tendered him a banquet.——Professor Wintz of Erlangen has been lecturing in Spain, and he was the guest of honor at a banquet given by the profession of Madrid recently.——Dr. I. de la Villa, professor of gynecology and obstetrics at the University of Valladolid, has been elected *alcalde* of the city. ——Prof. U. Baccarani of Ancona was recently presented by his assistants with a gold medal and illuminated address on vellum in token of appreciation for his many years of service as chief of the public hospital. A banquet closed the ceremony.——Dr. Soler Julia, a surgeon of Barcelona and member of the editorial staff of the *Revista Española de Medicina y Cirugia*, was presented with a silver and onyx tablet by an electricians' organization, in gratitude for services rendered.——The Rodriguez Abaytua prize was recently awarded to Dr. F. Masip y Valls of the editorial staff of the *Archivos de Medicina, Cirugia y Especialidades*. This prize is given by the National Academy of Medicine at Madrid for the best series of articles contributed during the year to the lay press, considered from the standpoint of philosophy, literary style and descriptive accuracy. His articles had been published in four different lay periodicals.

Deaths in Other Countries

Dr. **William C. Roe,** surgeon general, R. A. M. C. (retired); at Bournemouth, October 6, aged 88.——Lieut.-Col. **Robert T. Beamish,** R. A. M. C. (retired); suddenly in London, October 26, aged 73.——Dr. **Leopold G. Hill,** physician to the Church Missionary Society; in London, October 26.——Lieut.-Col. **Michael H. Thornley,** Indian Medical Service, superintendent of the Cuttack (Bengal) Medical School and Hospital; at Epsom, England, October 30, aged 47.——Dr. **A. H. Nijland,** prominent for many years in public health organization in the Far East, director of the Pasteur Institute in the Netherlands Indies, aged 54. He returned to Rotterdam in 1918, where he was connected with the Institute for Tropical Medicine.——Dr. **Jorge Laure,** chief of the French Hospital at Buenos Aires for many years.——Dr. **D. Harosteguy** of Las Flores, Argentina, deputy and senator. ——Dr. **A. Casanova** of Valencia and Dr. **R. Blanco Vasquez** of Madrid.——Dr. **R. Jolly,** professor of gynecology and obstetrics at the University of Berlin, aged 47.——Dr. **L. Menditto** of Caserta, aged 32. He was a prisoner of war in Austria for sixteen months.

CORRECTION

Insanity in Egypt.—In the summary on page 2120 of Marie's article on this subject, the proportion of Arabs affected with general paresis should have been stated as 0.55 per 10,000 (not thousand). The proportion among Greeks residing in Egypt was 12.3 and for Austrians 25.1 per 10,000, while it was only 0.55 among the Arabs, according to the records for twenty-six years.

Government Services

Instruction in Navy Medical Corps

The following medical officers recently completed a course of instruction at the Harvard Medical School in ophthalmology, otology, laryngology and rhinology: Lieutenants A. L. Bryan, E. C. Ebert, J. C. W. Taylor, R. B. Team. Lieut. R. W. Hutchinson will complete a course in roentgenology at the University of California, January 1. Lieut.-Commanders G. F. Cottle and R. W. McDowell are taking a course of instruction in Surgery at the Mayo Foundation, Rochester, Minn.——The following will be graduated from the Naval Medical School, Washington, D. C., Dec. 22, 1922: Lieutenants P. T. Crosby, R. A. Barker, F. P. Keaney, A. N. Champion, J. H. Robbins, H. H. Montgomery, Oscar Davis, E. H. Prescott, Max Silverman, F. P. Gardner, J. K. Gordon, F. E. Tierney, J. J. Kaveney, L. L. Edmisten, F. M. Rohow.——The following will complete their course of instruction at the Medical Research Laboratory and School for Flight Surgeons, Mitchel Field, Mineola, L. I., N. Y., Dec. 16, 1922, and will be assigned to the various naval air stations at home and beyond the continental limits of the United States: Lieutenants A. C. Smith, R. P. Henderson, F. R. Bealer, J. C. Adams, F. H. Clements, J. R. Poppen, G. L. McClintock, W. W. Davies, W. H. Wynn, J. D. Benjamin, C. C. Ammerman. Another group of medical officers will be assigned to the Medical Research Laboratory and School for Flight Surgeons, Mitchel Field, in January. The next class at the Naval Medical School will assemble in February.

Narcotic Inspectors Wanted

The U. S. Civil Service Commission announces open competitive examinations for an inspector and an agent to investigate violations of the Harrison Narcotic Law. Applicants must have had at least one year's experience in investigation of major criminal activities.

Lieut.-Col. Dean Lewis Receives Medal

Lieut.-Col. Dean Lewis of Chicago has been awarded the distinguished service medal "for exceptionally meritorious and distinguished services." The citation says: "As chief of the surgical service of evacuation hospital No. 5 during the operations on the Marne and the St. Mihiel-Meuse-Argonne and Ypres-Lys offensives, by his tireless energy, organizing ability and unusual surgical skill, he successfully demonstrated that war wounds could be operated on in large numbers in front line hospitals with limited personnel, thus conserving many lives among combat troops."

The Navy Nurse Corps

The Secretary of the Navy has accepted the resignation of Mrs. Lenah S. Higbee, as superintendent of the Navy Nurse Corps. Mrs. Higbee, who has served continuously in the capacity of nurse, chief nurse and superintendent since the nurse corps was established, 1908, has desired for some time to take up other work. On the recommendation of Surgeon-General Stitt, Miss J. Beatrice Bowman has been appointed superintendent of the Nurse Corps from Dec. 1, 1922.

United States Public Health Service and the Budget

The 1924 budget submitted to Congress by the President recommends the following appropriations for the U. S. Public Health Service. A statement of appropriations, estimated for 1923, and actual for 1922, is given for comparison:

	Estimated 1924	Estimated 1923	Actual 1922
Salaries and expenses	$3,297,672	$3,539,723	$4,049,158
Prevention of epidemic diseases	334,792	399,750	574,464
Pay of personnel and maintenance of hospitals	4,878,925	6,611,394	3,601,658
Expenses, division of venereal diseases	225,953	398,600	194,895
Total, public health service	$8,737,342	$9,949,467	$8,620,177

Foreign Letters

LONDON

(From Our Regular Correspondent)

Nov. 20, 1922.

The Pancreatic Hormone Treatment of Diabetes

Toronto University has offered to the Medical Research Council as a free gift all rights in a patent covering the treatment of diabetes with its newly developed pancreatic extract, for which application has been filed in this country. The gift has been accepted by the council, which is making arrangements for further research and is considering the best method of production here. It is the object of the university to place in the council's hands for trial in this country the powers of control over the preparation that it has found desirable in America. Representatives of the council have recently visited the various centers of work in the United States and Canada, and have investigated carefully the progress made there. The council is of the opinion that the treatment opens to many diabetics a bright prospect of relief, of longer life, and less severe deprivation. The question of improvement in the methods of preparation and administration of "insulin" (the name that has been tentatively given the product) and determination of the limits of its efficacy, whether it can cure or only relieve, are matters said to demand further research. A process may succeed when carried out on an experimental scale in a laboratory, but much more serious difficulties are presented when it is developed on a large scale in a factory. To leave the manufacture to uncontrolled commercial enterprise would involve risk of the production of inactive preparations, on the one hand, and of preparations of unusually high potency, on the other hand, which might be dangerous.

The council is therefore safeguarding, while accelerating, the production of the preparation. It is arranging tests and experimental study at several hospital centers. The scientific workers who undertake the responsibility will work as members of a coordinated team in close touch with the council. The council is also considering under what conditions it may be possible to grant licenses to private institutions or factories having proper facilities for making and testing the extract. Possibly, some of the existing commercial organizations may be able to deal satisfactorily with the problem of providing "insulin" and of keeping pace with the demand, which will grow rapidly if the remedy succeeds. On the other hand, it may prove that the needs of the situation can best be met by a special organization established with the aim of benefiting patients and with no view to commercial profit.

The Progress of Surgery: Excessive Operating for Appendicitis

Before the surgical section of the Royal Society of Medicine, Mr. James Berry, the president, delivered an address on the progress of surgery. As a student, he saw the last of the preantiseptic period, when surgeons wore at operations dirty, blood-splashed frock coats. He followed surgery through its unprecedented progress in the antiseptic and aseptic periods. He thought that there was danger today that the ordinary surgeon, impressed by the brilliant results of the great masters, might imagine that he could do what they did. An extensive operation on the brain, which might be a brilliant success in the hands of a Harvey Cushing, might result in disaster in the hands of a surgeon not specially trained along this line, even though he followed the same method. A cholecystectomy that would be the right operation in a particular case for a Moynihan or a Mayo, might be the wrong operation for Dr. A. or Dr. B. A slight error in the placing of a suture in a gastro-enterostomy, the careless application of a single ligature in a thyroidectomy, the incorrect placing of a clamp in a cholecystectomy might easily prove fatal.

There was no such thing as the mortality of such and such an operation, for that depended on the condition for which it was performed, on the operator and on the manner of its performance. While the results of aseptic operations were brilliant, we could not congratulate ourselves as much on the results of operations undertaken when sepsis already existed, especially in acute suppurative abdominal conditions. For the treatment of these it was difficult for the young operator to acquire the necessary experience. The operation for appendicitis was now too frequently performed. While the majority of such operations were easy of performance and almost devoid of danger, there remained a minority that were severe and difficult. Most harm was done when the patient was not seen until late, especially when abdominal distention had set in. The operative risk then was considerable. It was not sufficiently realized that most of the patients would not die if not operated on, and that a few days' delay often rendered the patient's condition more favorable for operation, if that should prove necessary. In all such cases, the operation should be judged on the merits of the particular case. If we were all to go back to the treatment of appendicitis in vogue forty years ago, the mortality would be less. By "all," he meant not merely all hospital surgeons but all who operate for appendicitis. Much more care should be taken in selecting cases for operation as regards both time and manner. It was commonly believed that the custom of operating freely for acute appendicitis had resulted in great saving of life; but statistics showed that deaths from appendicitis had increased, the official figures being:

TOTAL DEATHS FROM APPENDICITIS AND PERITYPHLITIS IN ENGLAND AND WALES

Period	Male	Female	Total
1901-1905	4,873	3,418	8,291
1906-1910	6,299	4,587	10,886
1911-1915	7,260	5,480	12,740
1916-1920	6,827	5,591	12,418

These figures tended to show, at least, that the mortality from appendicitis had not diminished since the custom of operating in the acute stage had been prevalent. Some explained the figures by saying that appendicitis was becoming more frequent; but of that there was no evidence. During the same period, the deaths from peritonitis (nonpuerperal) showed a decrease of 3,305.

Though the war had led to great advances in the treatment of septic wounds, compound fractures, plastic surgery and orthopedics, it had a harmful effect in one direction: It produced a crop of young operators who undertook dangerous operations because of a few years' practice in military surgery—the surgery of injuries in young and healthy men. This experience did not qualify for civilian surgery, such as that of the breast or cancer of the tongue, or in diseases of the biliary passages, stomach, colon or prostate. If the cases were all straightforward and could be dealt with by a textbook operation, all might go well; but it might easily fare ill with the patient if some unexpected difficulty arose for which the operator was not prepared. Mr. Berry concluded with his favorite definition of a good surgeon: "one who always knows when to put in, and when to take out, a drainage tube."

Sterilization of the Unfit

Passing judgment on an epileptic prisoner, Mr. Justice Roche drew attention to the question of sterilization. He

said: "In my judgment, the medical profession of this country would be performing a public service if they studied earnestly the question of the feasibility of sterilizing both men and women with tendencies such as this man before me has. To allow them to produce is breeding from the worst stocks, and propagating disease and crime. I am expressing no opinion whether it is feasible or whether Parliament should pass such a measure. That depends on the examination of skilled persons as to the feasibility and risks attending." This pronouncement has attracted attention in the press, where it is pointed out that while we have no sterilization laws, they have been in force in the United States for some time, fifteen states having passed them before 1920.

BERLIN

(From Our Regular Correspondent)

Nov. 18, 1922.

Conflict Between the Physicians and the Health Insurance Societies

At various times, in my letters, I have referred to the misunderstandings and discord that have existed between the health insurance societies (*Krankenkassen*) and the physicians since the beginning of German social legislation. During recent months, relations have become especially strained, which is not surprising, since the fundamental basis of the conflict is naturally much accentuated by the difficult economic and political conditions that exist at present. The physicians have continually found cause to complain of the alleged unjustifiable pressure that has been brought to bear on them by the directors of the *Krankenkassen*, whereas the latter have again and again given expression in public to the conviction that the present system of health insurance has been worked out by the physicians without regard to the welfare of the patients, and that the present plan imposes a too heavy financial burden on the health insurance societies. In addition to the physicians' former grounds for complaint, the continual falling off in the value of the mark and the consequent raising (now 200,000 marks) of the limit of income that a person may have and still be insurable under the health insurance law have made it possible that, still more frequently than formerly, patients who are financially well able to secure medical treatment as private patients take advantage of the health insurance law and are thus able to obtain medical service at the ridiculously low rate that the *Krankenkassen* pay (at present the monthly fee for each patient is 100 marks). Those insured in the *Krankenkassen* are doubtless, in the main, on the side of the physicians; for, by the granting of the right of free choice of physician, which was secured to the patients by the physicians after a long struggle, the insured must have become convinced that they enjoy the same advantages as private patients. Under former conditions, before the choice of physician was permitted, patients could not be so sure of the kind of treatment they would receive; for under the system of a so-called "fixed panel" patients were compelled to allow themselves to be treated by the small number of physicians who, through the favor of the directors of the health insurance societies, had been selected on the panel. These panel physicians were naturally desirous of keeping in the good graces of the directors, and were therefore inclined to endeavor to satisfy them rather than the patients. With the introduction of free choice of physician, the situation was reversed, which results to the advantage of the patients. On account of this difference between the former and the present condition, it will be readily understood why the directors of the *Krankenkassen* still persist in opposing the system of free choice of physician.

At the present critical moment, when the financial distress of physicians has increased with the general financial depression affecting the whole population, the directors of the *Krankenkassen* seem to think that the time has come to make a successful assault against the principle of free choice of physician. They are endeavoring to reduce still further the already wretchedly low fees paid to the physicians, which would add to the financial distress of the latter. The physicians, from a sense of self-preservation, are assuming the attitude of defense, and, of late, the conflict has become so sharp that the two parties have threatened to break off all relations with each other. In the event of such a condition arising, the *Krankenkassen*, according to law, would be reduced to the necessity of giving the patients a daily cash allowance in lieu of prescribing free medical treatment, free medicine and free hospital care. The physicians would then treat the insured as private patients and no longer as members of the health insurance societies, and would consequently receive much higher fees from the individual patients. Unfortunately, such a condition of affairs would completely nullify the blessings sought and, to a certain extent, secured by health insurance legislation, for it has been the experience of the past that a considerable portion of the patients would use for self-medication the cash they receive; others would have recourse to quacks, the result being that no rational treatment of their affections would be secured. The course of illness and the period of nonemployment would thus be prolonged, which, in view of the many thousands of patients, would inflict a heavy financial loss on the state. Then, again, the *Krankenkassen* would also suffer, for, owing to the fact that the period of illness would in many instances be prolonged, they would be compelled to pay the daily cash compensation much longer than would be the case under rational treatment. The physicians, in the end, would fare no better, for the amount gained by the increase in the individual fees would be more than outweighed by the loss suffered through the falling away of patients. Thus, all persons concerned would find their situation made worse if all relations between the health insurance societies and the physicians should be broken off as threatened.

Among the physicians, especially in view of the fact that under the present conditions a large number are in bitter want and therefore many would be inclined to accept positions on a "fixed panel," the prospects that would be opened up by the breaking off of all relations have not been altogether pleasing; therefore, the official councils of the Leipzig League (*Verband*) and of the Physicians' League of Greater Berlin, respectively—in spite of the insufficient fees paid by the *Krankenkassen* and notwithstanding their grievances against the directors of the *Krankenkassen*, have decided, for the time being, to give up all thought of canceling their contracts with the *Krankenkassen*. A factor that doubtless had some weight in bringing about this decision was the consideration that, during the weeks just preceding Christmas, patients and the members of their families would not be inclined to use the cash compensations to employ a physician —especially in view of the present seemingly high fees demanded by physicians. The reduction in income for a large percentage of physicians would be so great that they would be compelled by their need to submit to whatever conditions should be imposed by the directors of the *Krankenkassen*. In spite of these facts, the view prevails among physicians that, owing to the gravity of the situation as portrayed, a cancellation of the present contracts between the physicians and the health insurance societies is inevitable in the near future, in order that better contracts with respect to fees and other provisions may be secured. It is hoped that the government and the parliament, which heretofore, for general social reasons, have sided rather with the *Krankenkassen* and their members, may now have gained a correct insight into the actual condition of affairs and will enact

proper legislation in support of the physicians in their struggle with the directors of the *Krankenkassen*. These conditions are set forth in a clear and impressive manner in two articles by S. Alexander and Stier-Somlo, respectively, published recently in the *Deutsche medizinische Wochenschrift*. Alexander is the chairman of the Aerztliche Standesvereinigung of Greater Berlin, and Stier-Somlo is a professor in the University of Bonn, and is regarded as an authority in the field of government insurance.

Death of Professor Gutzmann

Prof. H. Gutzmann, who was well known for his researches in the field of speech defects and their treatment, and who, through his endeavors, helped to found and secure recognition for this special branch of medicine, died in Berlin, November 5, at the age of 57. Gutzmann's father was director of the Berlin Municipal School for the Deaf and Dumb, and it was through his influence that the son came to take up these studies. In 1905, Gutzmann became privatdozent in internal medicine, lecturing mainly on voice and speech defects. His works deal with language in general and with speech defects in children—stuttering, voice development, care of the voice, and physiology of the voice and of speech. He has also published a commentary on Kussmaul's book "Disturbances of Speech" and numerous articles in reference works.

PARIS

(From Our Regular Correspondent)

Nov. 17, 1922.

Suit Brought for Error in Diagnosis

The correctional tribunal of Evreux rendered a decision in a case brought against Dr. Vallet of Vernon for an error in diagnosis which, it was asserted, resulted in homicide. In the early part of 1921, a war widow, about 40, presented herself at the office of Dr. Vallet during his consultation hour. Vallet's first assumption was that the patient was pregnant. But the patient affected to be slandered by this diagnosis, the incorrectness of which she asserted she could prove. Unfortunately, the surgeon allowed himself to be convinced by the alleged proofs, and after reexamining the patient diagnosed a fibroma requiring surgical intervention. During the course of the operation the truth was revealed. The woman was pregnant, and Dr. Vallet decided at once to perform a cesarean operation. The child was saved, but a few hours later, the mother had an internal hemorrhage and succumbed. The prosecution held that the error in diagnosis constituted a grave tort and, since this tort had brought about the death of a patient, Article 319 of the Penal Code, which provides for the punishment of the perpetrator of homicide committed involuntarily, was invoked. On the basis of testimony given by medicolegal experts and by Dr. J. L. Faure, professor of clinical gynecology in the Faculté de médecine of Paris, that such an error in diagnosis is not only possible but occurs frequently, Dr. Vallet was acquitted of the charge.

Psychology of the Sexes in Relation to Vocational Guidance

One of the great problems of psychopedagogy is the differentiation of the individual talents or aptitudes of pupils with the view of securing a better development and utilization of powers that will redound to the benefit of society. This differentiation will make it possible to establish a more effective vocational guidance for young women especially, and the education of women will consequently be completely reorganized. This is the conclusion reached by Mlle. Marguerite Evard in an interesting article published in the review *L'Education*.

According to the observations of Mlle. Evard, women have more delicate sense perception than men. Women perceive a weight of 30 mg.; men, under like conditions, do not perceive a weight under 40 mg. Women can distinguish a gap of 20 mm. between two points; men, under the same experimental conditions, do not distinguish a gap under 35 mm. In matters dependent on a fine sense of taste and smell; likewise in the discrimination of colors and delicate shades of color, women are superior to men. Daltonism and achromatopsia are much more frequent in men than in women. Women, therefore, can be expected to be excellent observers. A delicate sense of touch is indispensable for a seamstress, a watchmaker, a feather worker, a telegrapher or a stenographer. A delicate taste and sense of smell are indispensable also in pharmacy, in the perfume industry and in the confectioner's trade, all of which at present are monopolized by men, in spite of the fact that men possess less subtile sense perceptions. The keener perception for colors that characterizes women finds its application in the fashions, the industrial arts, and the decoration of books, jewelry, furniture and pottery. Mlle. Evard also emphasized that women have the particular faculty of seeing laterally without seeming to do so. It is a very useful aptitude that man has not acquired, and one that will often serve policewomen in good stead in connection with the supervision of expositions, large stores and the like. Being gifted with acute auditory perception, women are capable of rendering good service as telephonists, in certain factories, and in various kinds of administrative work.

Our schools as such do not prepare young women for life, in that they fail to give the needed special development to their sensorial aptitudes. Psychology has revealed in children of both sexes a phase of intense sensorial activity manifested during the period from 6 to 13, at which time the whole intelligence is absorbed in making concrete acquisitions. Binet termed this the period of "sensorial intelligence." The public schools take no account of this psychologic fact in the mental development of children. Mlle. Evard expressed the hope that scientific experimental researches might be undertaken in order to discover the aptitudes peculiar to the two sexes, with a view (1) to better adaptation of the education of women to the special qualities of the feminine mind through the introduction of more appropriate methods and on the basis of a clearer vision of the goal to be attained, and (2) to deriving a better advantage from these aptitudes for the vocational guidance of adolescents of both sexes. To men, who possess a higher creative capacity, types of work would be assigned in which they can give free rein to their technical, scientific and artistic genius—in which, too, their physical strength and endurance come into play. To women will be reserved the many fields of activity in which their superior powers of memory, observation, compilation and repetition will give them a distinct advantage over men.

Public Lectures on Medical Topics

At one of the recent meetings of the administrative council of the Syndicat des médecins of the department of the Seine, Dr. Jayle brought up the question of the organization by the syndicat of public lectures on medical topics in order to establish points of contact with the laity. This proposal, however, met with objections. Drs. Durand and Hartmann expressed serious doubts as to the usefulness of such lectures. They thought it would be a difficult and delicate matter to decide what subjects to discuss. Dr. Ferry held that certain questions of a professional nature might be treated to advantage in public lectures in order that the point of view of the syndicat might be made known to other organizations. A case in point would be the proposed legislation in

regard to health and invalidity insurance. If the lecture plan should be introduced, it would be Hartmann's recommendation that the topics to be discussed should not bear on purely medical questions but solely on questions of a social nature which deserve to be considered from a medical point of view.

MADRID

(From Our Regular Correspondent)

Oct. 16, 1922.

Von Noorden Lectures on Chronic Enterocolitis

Professor von Noorden of Frankfort has given a lecture on chronic enterocolitis at the Madrid Medical School. From this category, he excludes the serious forms of the disease, having as a pathologic base an ulcerative or infiltrating colitis. He considers ulcerative colitis as due to colonic or dysenteroid bacteria, and infiltrating colitis as due to septic germs that have lodged in the intestinal wall. Purposely, he did not touch on amebic colitis or on the types of the disease caused by *Lamblia* or *Cercomonas*, which are common and are adequately treated with ipecac preparations. Von Noorden is skeptical as to the etiologic rôle of *B. paratyphosus* B, and he centered his discussion on cases presenting no demonstrable infection by pathogenic germs. So far, no bacteriologist has been able to find any specific pathogenic organism in the condition described as chronic enterocolitis and such bacteria as have been isolated in the feces must be considered as normal inhabitants of the bowel.

ENTEROCOLITIS CAUSED BY ABNORMAL FERMENTATION AND PUTREFACTION—DIFFUSE CHRONIC ENTEROCOLITIS

According to A. Schmidt, irritating bowel disturbances in either acute or chronic enterocolitis may be attributed to two different processes. In the first, fermentative agents are responsible; in the second, putrefactive agents predominate. In order to conquer the putrefactive process, the amount of protein must be reduced and the development of a fermentative flora must be furthered through the use of carbohydrates, and—with some caution—milk and buttermilk. To check the fermentative process, the intake of carbohydrates must be decreased for a long time. The cure of fermentative enteritis is usually not difficult. The putrefactive form is somewhat more rebellious, since the intestine itself furnishes the putrescible material. In addition, the name often masks other conditions, such as organic diseases of the intestine, benign or malignant growths, tuberculosis or strictures. Comby's dietetic treatment seems a good weapon when the condition is really putrefactive and not organic. In such diffuse enterocolitis, there is practically always diarrhea. This can be checked with opium, a method not indorsed by von Noorden. In fermentative enterocolitis, there is microscopic, though not macroscopic, mucus. In the putrefactive form, it is apparently destroyed by the process itself, its place being taken by white cells and even by red cells.

FECAL OR MUCOMEMBRANOUS COLITIS

Fecal or mucomembranous colitis is very common, especially in neuropathic patients. The prevalence among women is twice as great as among men. There is usually a history of neglected constipation for years. Many patients had their appendixes taken out, without improvement. In the next stage, diarrhea alternates with constipation. The stools often contain mucous masses, sometimes even surpassing the amount of feces. There are a few cells in the mucus, eosinophils predominating. The stools are putrid, and neutral or weakly alkaline. There is no fermentation, no undigested pieces of meat, nor increase of connective tissue, which shows that digestive processes in the small intestine are not involved, and that chyme is not rushed through the ileojejunal tract.

The urine contains an abundance of indican and sulphoethers, a distinction from constipation, which causes no indicanuria. Remote toxic effects also are noticed, such as headaches and rheumatic or neuralgic pains. Quite often, nerve trunks are tender to pressure, this being the phenomenon described by von Noorden as enterotoxic sensitive polyneuritis, caused, possibly, by split protein derivatives, but not by aromatic substances, such as indol or skatol. This indicanuria—which may be absent—is considered by von Noorden as evidence that putrefactive processes are at work. The secondary affections of the nervous system are true secondary toxic conditions. The manifestations of stasis and irritation resulting from the chronic fecal stasis must be taken into consideration. It is never a case of peristaltic weakness alone but of this condition in combination with vagotonic spastic contractions. These spasms are responsible for the delay of the fecal bolus in the distal colon and sigmoid. The mucus output does not indicate an inflammatory condition, being only a defense reflex of the intestinal wall. The designation mucous or pseudomucous colitis is not appropriate, since originally there is no colitis and no inflammation. But, secondarily, inflammatory irritative conditions may develop. The spasm may lead as far as an organic stricture would. Thus, we have the clinical picture of acute fecal superficial colitis, which may become chronic and lead to serious changes.

In management and treatment, the difference between chronic diffuse enterocolitis and fecal enterocolitis must be kept in mind. In the former, the causative agent is a bacterial process; in the latter, a functional stasis, i. e., a change in the neuromuscular system. Fecal enterocolitis is by far the more common of the two. For pathologists the changes due to diffuse chronic enterocolitis are a rarity. When the functional basis of fecal enterocolitis is understood, its therapy is apparent. Of first importance is a restricted diet. The spasmophilia must be relieved; and the sovereign remedy is atropin. Rest and the use of wet packs are advocated. Any hypnotics given must contain no opium. To assist in emptying the bowel, one must turn to irrigations or some mild laxative, such as rhubarb with calcined magnesia. This is the preliminary treatment. The real treatment requires an essential drug, atropin. Dosage, according to susceptibility, must be from 0.001 to 0.003 gm. a day. The diet should be such as to increase the size of the fecal bolus and produce a soft stool. Vegetables and fruits such as plums are appropriate. Agar has been advocated in combination with cascara sagrada extract.

Marriages

GLEAVES B. KENNY, Lieutenant, M. C., U. S. Army, Washington, D. C., to Miss Pearl Lee Braswell of Norfolk, Va., November 30.

GUY GIBSON CAMPBELL, Tenom, British North Borneo, to Miss Helen A. Breen of Portland, Ore., October 26.

LEWIS F. SOULE, Salem Depot, N. H., to Miss Jesse R. Bleakney of Dorchester, Mass., November 11.

ARTHUR REUBEN BOGUE, Rochelle, Ill., to Miss Rosalind Victoria DeOn of Chicago, November 19.

WILLIAM ALEXANDER MCINTOSH, Oberlin, Ohio, to Miss Austa McKitrick of Kenton, October 3.

FRED SOMERVELL WATSON, Okmulgee, Okla., to Miss Gelene Nichols of Ozark, Ark., October 4.

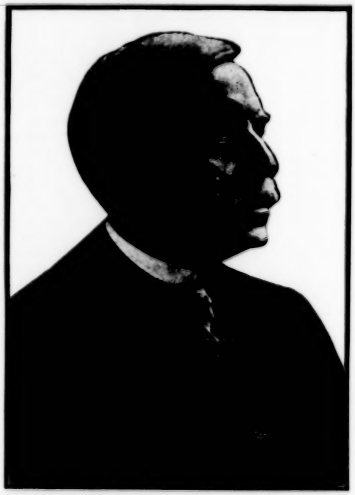
VON HELLER BROBECK to Miss Helen Trostel, both of Colorado Springs, Colo., November 19.

MURDOCK SYKES EQUEN to Miss Anne Cornelia Hart, both of Atlanta, Ga., October 25.

GEORGE E. OREBAUGH to Miss Hazel Sigler, both of Norwood, Ohio, October 19.

Deaths

William Edward Quine ✠ Chicago, for thirty years professor of the principles and practice of medicine in the College of Physicians and Surgeons, died of angina pectoris at his home, December 7, aged 75 years. Dr. Quine was born in the Isle of Man in 1847 and came to Chicago with his parents in 1853. He received his medical degree from Northwestern University College of Medicine in 1869. Following his graduation he became professor of materia medica and therapeutics in his alma mater and held the appointment until 1883; in that year he was appointed to his professorship in the College of Physicians and Surgeons and held the appointment continuously until 1913, serving also from 1892 to 1913 as dean. He was prominent in the absorption of the medical school by the University of Illinois, which took place in 1913. He was president of the Chicago Medical Society in 1872, of the Illinois State Medical Society in 1904 and first president of the Institute of Medicine of Chicago in 1916. He was attending physician to the Cook County and Mercy hospitals from 1871 to 1883 and on the consulting staffs of St. Luke and Michael Reese hospitals from 1910 to 1922. From 1885 to 1889 he was president of the Illinois State Board of Health. Aside from his medical interests Dr. Quine had many activities. He built a hospital of one hundred beds for women in Chin Kiang, China, in honor of his deceased wife, who had served as a missionary in China. He also endowed four schools for girls in different parts of China, each named in her honor. He founded and for ten years supported the library of the College of Medicine of the University of Illinois, which has been named in his honor. In memory of his daughter he endowed a "Ruth Quine Deaconess" in connection with a benevolent institution in Normal, Illinois, founded by his mother. He also donated his former home to the Chicago Missionary and Church Extension Society of the Methodist Episcopal Church, for use as a community house for the benefit of negro Methodism. Dr. Quine was a deeply religious man, of intense and powerful personality, an exceptionally forceful didactic teacher, a greatly loved and genuine leader.



WILLIAM EDWARD QUINE, M.D., 1847-1922

Flaval Shurtleff Thomas, South Hanson, Mass.; Medical School of Harvard University, Boston, 1874; died, November 26, aged 70, following a long illness. Dr. Thomas received his B.Sc. from Syracuse University in 1885, and his D.V.Sc. from McGill University, Montreal, 1890. He was one of the editors of the Standard Dictionary of the English language and author of a dictionary of University Degrees, and "A Study of the LL.D., Especially at Harvard."

George William Dow ✠ Lawrence, Mass.; Medical School of Harvard University, Boston, 1881; member of the Massachusetts Medicolegal Society; for twenty years medical examiner of Greater Lawrence; formerly member of the school board; at one time city physician; on the staff of the Lawrence General Hospital; aged 70; died, November 21, from heart disease.

Oliver R. Stuteville, Big Clifty, Ky.; Hospital College of Medicine, Medical Department, Central University of Kentucky, Louisville, Ky., 1889; member of the Kentucky State Medical Association; aged 60; died, November 14, from injuries received when the automobile in which he was driving was struck by a train.

Frank Aikman Jones, Memphis, Tenn.; Louisville Medical College, Louisville, Ky., 1890; member of the Tennessee State Medical Association; formerly lecturer on clinical medicine and physical diagnosis at the Memphis Hospital Medical College; aged 55; died, November 23, from heart disease.

James Franklin Battin ✠ Marshalltown, Iowa, State University of Iowa College of Homeopathic Medicine, Iowa City, 1897; formerly city physician; served in the M. C., U. S. Army, during the World War; aged 53; died, November 25, at Excelsior Springs, Mo., from diabetes mellitus.

Henry R. Pennock, Wilmington, Del.; Hahnemann Medical College and Hospital of Philadelphia, 1902; on the staff of the Wilmington Homeopathic Hospital; aged 42; died, November 25, at the Hahnemann Medical College and Hospital, Philadelphia.

Charles Herman Miller ✠ Dorchester, Mass.; Medical Department of the University of New York, 1891; member of the New England Medical Society; for thirty years practicing physician in Boston; aged 59; died, November 23, from pneumonia.

Curtis Carrington Williams ✠ Niles, Ohio; University of Michigan Medical School, Ann Arbor, 1890; served in the M. C., U. S. Army, with rank of captain, during the World War; aged 59; died, November 11, from heart disease.

Samuel B. McGavran, Cadiz, Ohio; University of Wooster Medical Department, Cleveland, 1872; formerly member of the state legislature; at one time member of the state board of medical examiners; aged 75; died, November 20, from senility.

Leon Gerald Holland, Eugene, Ore.; Willamette University Medical Department, Salem, Ore., 1904; suffered the loss of an arm during the Philippine Islands War; aged 46; died, November 15, at the Mercy Hospital, from cerebral hemorrhage.

Norman Algernon McLeod ✠ Brookhaven, Miss.; Medical Department of the Tulane University of Louisiana, New Orleans, 1896; served in the M. C., U. S. Army, during the World War, with rank of captain; aged 50; died, November 20.

Otto Braun ✠ Ashland, Wis.; Rush Medical College, Chicago, 1892; specialized in ophthalmology, otology, laryngology and rhinology; aged 56; died suddenly from angina pectoris, November 21, while on a hunting trip near Spider, Wis.

Julius Barker Southworth, Stuyvesant Falls, N. Y.; University of Vermont College of Medicine, Burlington, Vt., 1882; member of the Medical Society of the State of New York; also a publisher; aged 73; died, November 18.

James M. Johns, Texarkana, Ark. (licensed, Arkansas, 1903); Civil War veteran; aged 73; died, November 21, from a bullet wound in his brain, presumably self-inflicted, while suffering from an incurable disease.

Leander B. Smith ✠ Fremont, Neb.; College of Physicians and Surgeons, Keokuk, Iowa, 1878; first president of the Dodge County Medical Society; formerly city physician; aged 76; died, November 19, from senility.

Ignatius David Steffen ✠ Antigo, Wis.; Rush Medical College, Chicago, 1887; member of the board of health; president of the Langlade National Bank; for three terms served as mayor; aged 67; died, November 21.

Walter D. Nicholson, Columbia, S. C.; Medical College of the State of South Carolina, Charleston, S. C., 1860; Civil War veteran; aged 87; died, October 6, at the Confederate Soldiers' Home, from rheumatic fever.

John Weigle Mehring, Littlestown, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1905; aged 41; died, November 16, at the West Side Sanitarium, York, from a complication of diseases.

James H. Jones, Jonesboro, Tenn.; Vanderbilt University Medical Department, Nashville, Tenn., 1880; member of the Tennessee State Medical Association; aged 68; died, November 6, following a long illness.

Augustus A. E. Brien ✠ Manchester, N. H.; University of Montreal Faculty of Medicine, Montreal, Que., Canada, 1883;

founder of the Franco-Americaine Historical Society; aged 64; died, November 19.

William T. Putt, Grand Island, Neb.; Eclectic Medical Institute, Cincinnati, 1874; for eight years house physician at the Nebraska Soldiers' and Sailors' Home, Burkett; died recently, aged 79.

Eugene Justine Butler, Wilkes-Barre, Pa.; College of Physicians and Surgeons, Baltimore, 1893; member of the board of education; aged 61; died, November 6, from cerebral hemorrhage.

Frederick Darwin Stone ✤ Syracuse, N. Y.; Syracuse University College of Medicine, Syracuse, N. Y., 1903; aged 44; was instantly killed, November 17, when he was struck by a street car.

John Calvin Wilson ✤ Dallas, Texas; Tulane University of Louisiana School of Medicine, New Orleans, 1919; aged 33; died, November 18, at St. Paul's Sanitarium, from uremia.

William S. Cline, Woodstock, Va.; Washington University School of Medicine, Baltimore, 1867; aged 78; died, November 19, from injuries received in a fall some time ago.

Irwin Franklin Huff ✤ Sellersville, Pa.; University of Vermont College of Medicine, Burlington, Vt., 1885; aged 62; died, November 24, from acute bronchial asthma.

John Lewis Vialet, Baton Rouge, La.; Long Island College Hospital, Brooklyn, 1880; member of the Louisiana State Medical Society; aged 72; died, September 22.

John Clay Kirby ✤ Cedar Vale, Kan.; State University of Iowa College of Medicine, Iowa City, 1892; aged 58; died suddenly, November 16, from heart disease.

John T. Booth, Cincinnati; Cincinnati College of Medicine and Surgery, 1879; veteran of the Civil and Spanish-American wars; aged 81; died, November 15.

Isaac M. Minton, Fortescue, Mo.; Missouri Medical College, St. Louis, 1883; aged 67; died, November 11, from heart disease, following an operation.

Dennis Cornelius O'Brien, Lexington, Mich.; University of Michigan Medical School, Ann Arbor, 1867; aged 78; died, November 19, from paralysis.

Frederick William Marotz, San Pedro, Calif.; Long Island College Hospital, Brooklyn, 1885; aged 63; died, November 27, from pneumonia.

Charles Frederick Wahrer ✤ Fort Madison, Iowa; College of Physicians and Surgeons, Keokuk, Iowa, 1887; aged 72; died, November 19.

Martin Landis Hershey ✤ Hershey, Pa.; Jefferson Medical College, Philadelphia, 1883; aged 65; died, November 10, from heart disease.

Charles T. Horn ✤ Lehighton, Pa.; College of Physicians and Surgeons, Baltimore, 1878; aged 74; died, November 20, from heart disease.

Joel Frank Trull, Biddeford, Maine; Boston University School of Medicine, Boston, 1894; aged 54; died, November 22, from paralysis.

Charles A. Hale, Ravenna, Neb.; University of Nebraska College of Medicine, Lincoln, Neb., 1886; aged 73; died, October 18.

John H. Hockenhull, Cumming, Ga.; Emory University School of Medicine, Atlanta, 1886; aged 59; died, November 19.

Andrew H. Barber, Dorrance, Kan. (licensed, Kansas, 1903); aged 58; died, November 5, from carcinoma of the nose.

Charles Elias McCarty, Peoria, Ill.; College of Physicians and Surgeons, Chicago, 1903; aged 40; died, November 20.

John Smith Barton, Cuba, Ill.; Eclectic Medical Institute, Cincinnati, 1878; aged 74; died, November 20, from paralysis.

Charles Fox Howell, Laurel Hill, La.; Medical College of Louisiana, New Orleans, 1882; aged 63; died, November 17.

John C. Roach, Atwood, Tenn.; University of Nashville Medical Department, 1872; aged 78; died, November 20.

David H. Mingle, Maxwell, Iowa; Jefferson Medical College, Philadelphia, 1871; aged 75; died, November 22.

Oliver H. Saunders, Findlay, Ohio; Medical College of Ohio, Cincinnati, 1891; aged 58; died, November 18.

Walter A. S. Murphy, Atchison, Kan. (licensed, Kansas, 1901); aged 71; died, November 14.

Solomon D. Shepard, Anderson, Ind. (licensed, Indiana, 1899); aged 89; died, November 28.

William D. Fall, Advance, Ind. (licensed, Indiana, 1897); aged 70; died, November 25.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

"ESTEROL" NOT ADMITTED TO N. N. R.

Report of the Council on Pharmacy and Chemistry

The Council has authorized publication of the following report, declaring "Esterol" (Frederick Stearns & Co.) inadmissible to New and Nonofficial Remedies.

W. A. PUCKNER, Secretary.

"Esterol" is the proprietary and nondescriptive name under which the firm of Frederick Stearns & Co. markets benzyl succinate. Benzyl succinate has been proposed as a substitute for benzyl benzoate on the ground that, being insoluble in water, it is almost tasteless and does not produce the gastric discomfort which benzyl benzoate is said, at times, to cause.

As might be expected from its composition, benzyl succinate has the action of benzyl esters, as has been determined by Macht (*Proc. Soc. Exper. Biol. & Med.* **38**:177, 1921) and also reported by Bye (*J. Indust. & Engin. Chem.*, March, 1921, p. 217). The available evidence does not permit judgment of the value of benzyl succinate as compared with that of benzyl benzoate. Thus while Nielsen and Higgins (*J. Lab. & Clin. Med.* **6**:388, 1921; **7**:69, 1921) have reported that in alkaline solution the succinate is hydrolyzed more rapidly than the benzoate, clinical trials carried out by Macht (*loc. cit.*) indicated that its action is milder than that of benzyl benzoate, probably because its insolubility retarded its absorption. The evidence was such as to warrant the admission of benzyl succinate to New and Nonofficial Remedies (THE JOURNAL, Sept. 24, 1921, p. 1023), but with the caution that its actual value remains to be determined.

The proprietary brand of benzyl succinate sold as "Esterol" is inadmissible to N. N. R. because it violates the principles and rules that govern the acceptance of articles as follows:

1. Proprietary names for medicinal articles are recognized only if the Council deems the use of such exclusive names to be in the interest of public welfare. In consideration of the benefits which may come from the discovery of a therapeutic agent, the Council concedes to the person or firm that by right of discovery controls such a product, the right to name it. If the discovery that a previously known substance has therapeutic value is deemed of sufficient importance, the Council may recognize a proprietary name for such a substance if the name be applied by the person who makes the discovery. Benzyl succinate was described in the literature about fifty years ago by Zana and Guareschi (*Gazz. Chem. Ital.* **2**:256). The therapeutic value of benzyl esters was first reported on by D. I. Macht (*J. Pharmacol. & Exper. Therap.* **2**:419, 1915).* Hence Stearns & Co. are neither the discoverers of the product nor of its therapeutic properties, and therefore the Council cannot recognize the proprietary name Esterol applied to it by Stearns & Co.

In presenting their brand of benzyl succinate to the Council, Stearns & Co. argued for the recognition of the proprietary name Esterol on the ground that they first determined the therapeutic value of benzyl succinate and first made it available to the medical profession. This would commit the Council, however, to recognize the many benzyl esters described in the literature, all of which would merely present a way of obtaining the action of the benzyl radical. Thus unendurable confusion would be caused by the application of a number of uninforming names applied to the various benzyl esters which might be put out and which so far have not been studied as to their therapeutic effects, for the reason that the benzyl effect is obvious from the make-up of the compound. To prevent this confusion, the Council has admitted benzyl succinate to New and Nonofficial Remedies, has provided tests and standards for the control of the product, and will accept brands of the product only on condition that they are marketed as benzyl succinate (to which may be appended the name or the initials of the firm which markets it).

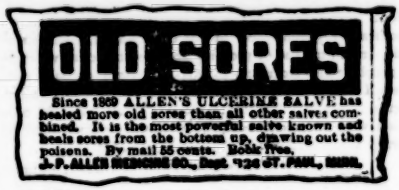
2. The label of the trade package contains recommendations for the use of Esterol in dysmenorrhea, asthma, colic, and hiccup, and thus advertises it indirectly to the public.

The Council declares Esterol (Frederick Stearns & Co.) incligible for admission to New and Nonofficial Remedies because the name is in conflict with the provisions against the application of proprietary names to unoriginal articles and because it is advertised indirectly to the public.

MORE MISBRANDED NOSTRUMS

Abstracts of Recent Notices of Judgment Issued by the Bureau of Chemistry of the United States Department of Agriculture

Allen's Ulcerine Salve.—The J. P. Allen Medicine Co., St. Paul, Minn., shipped in July, 1918, a quantity of "Allen's Ulcerine Salve" which was misbranded. The federal chemists reported that the stuff consisted essentially of lead soap and linseed oil. It was falsely and fraudulently represented



as an effective treatment for chronic ulcers, bone ulcers, varicose ulcers, syphilitic ulcers, gangrene, blood poisoning, lock-jaw, carbuncle, piles, gun shot wounds, bites of animals and reptiles, milk leg "and all old sores of every name and kind, no matter of how many years standing." In December, 1921, the J. P. Allen Medicine Co. pleaded guilty and was fined $1.—[*Notice of Judgment No. 10390; issued July 26, 1922.*]

Ward's Nostrums.—The Dr. Ward's Medical Co., Winona, Minn., shipped a quantity of nostrums in January, April and May, 1919, that were misbranded. These comprised the following:

Ward's Celebrated Liniment.—This, when analyzed by the federal chemists, was found to consist of alcohol, soap, sassafras oil, extract of red pepper and colored water. It was falsely and fraudulently represented as an effective cure for cholera, diarrhea, dysentery, colic, cramps, chills and ague, diphtheria, carache, piles, etc., as well as being a marvelous remedy for sick horses, cattle and hogs.

Ward's Lung Balsam.—This preparation the federal chemists found to consist of chloroform, menthol, tar, ipecac extract, ammonium chlorid, sugar, alcohol and colored water. It was falsely and fraudulently represented as an effective cure for asthma, bronchitis, pleurisy, sore throat, pneumonia, consumption and various other conditions.

Ward's Kidney and Bladder Remedy.—This the federal chemists reported was found to consist of extracts of bearberry and cascara sagrada, sodium phosphate, sodium acetate, alcohol and water sweetened with saccharin and flavored with lemon oil. It was falsely and fraudulently represented as an effective cure for acute and chronic kidney, bladder and urinary disorders, Bright's disease, gravel, scanty urine, catarrh of the bladder and enlargement of the prostate gland.

Ward's Sarsaparilla Compound.—This, the chemists found consisted of sarsaparilla extract, anise oil, sassafras oil, a trace of potassium iodid, alcohol and colored water. It was recommended as an effective cure for chronic affections of the skin, scrofula, erysipelas, pimples, piles, scald head, ulcers, syphilis, etc.

Ward's Kidney and Backache Pills.—These, according to the federal analysts consisted of methylene blue, bear-berry, digitalis, aloes, a trace of buchu and an aromatic oil. They were falsely and fraudulently represented as a cure for congestion of the kidneys, diabetes, gravel, all urinary troubles, etc.

In November, 1921, the company was fined $35.—[*Notice of Judgment No. 10142; issued May 10, 1922.*]

Durand's Swiss Herb Tea.—The Durand Medicine Co., Cincinnati, Ohio, shipped in April, 1922, a quantity of this product which was misbranded. The Bureau of Chemistry reported that analysis showed the product to consist of a mixture of plant drugs, including approximately 50 per cent. of senna with smaller amounts of fennel seed, orange peel, licorice root, juniper berries, althea root, sassafras bark, lavender flowers, buckthorn bark, red clover tops and saffron. Some of the therapeutic claims made for the product on the trade package were:

"To be used against Headache . . . Dizziness, Indigestion, Female Complaints, Liver and Kidney Complaints, Blood and Skin diseases, etc."

"To be used against Colds and disorders of the Lungs, Stomach, Liver, Kidneys and Bladder; also against Headache . . . Coughs, Dizziness, Loss of Appetite, Indigestion, Phlegm, Sleeplessness, Pale Complexion, Weakness, Pains in the Limbs, Rheumatism, Inflammation, Toothache, Blood and Skin Diseases and Female Complaints."

These and similar claims were declared false and fraudulent and applied "with a knowledge of their falsity for the purpose of defrauding purchasers thereof." In June, 1922, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No. 10480; issued Sept. 15, 1922.*]

Ferraline.—The Ferraline Medicine Co., Demopolis, Ala., shipped from Alabama to Texas, a quantity of this preparation that was misbranded. The federal chemists reported that analysis showed Ferraline to consist essentially of about 3 per cent. iron sulphate and other iron compounds and about 97 per cent. of water. The preparation was represented as a remedy for stomach trouble, rheumatism, indigestion, kidney trouble, eczema, burns and pellagra. The claims were declared false and fraudulent and in June, 1922, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No. 10529; issued Oct. 14, 1922.*]

Crab Orchard Mineral Water.—L. H. Goodwin & Co., Crab Orchard, Ky., consigned a quantity of "Crab Orchard Concentrated Mineral Water" from Kentucky to Ohio. When analyzed by the federal chemists, this was found to be a highly mineralized water, the dissolved mineral matter consisting chiefly of Glauber's and Epsom salts. The stuff was labeled in part:

"The World's Greatest Remedy For The Following Ailments In Their Most Chronic Forms; Rheumatism, Constipation, Kidney Diseases, Liver Complaints, Dyspepsia, Biliousness, Sick and Nervous Headache, Scrofula, Malarial Fever, Hay Fever, Typhoid Fever, Lumbago, Sleeplessness, Vertigo, Piles, Skin Disorders, Indigestion, Jaundice, Flatulency, Female Complaint, Neuralgia, Colds, La Grippe, Palpitation of the Heart, Disordered Nerves, Dysentery, Gout, Bilious Colic, Stomach and Bowel Troubles, Loss of Appetite, Catarrh in All Forms, Gall Stones, Dropsy, Bladder Troubles And All Diseases Arising From a Disordered Liver, Kidneys, Stomach and Impure Blood."

These claims were declared false and fraudulent as the water contained no ingredient or combination of ingredients capable of producing the effects claimed. In May, 1921, the case came to trial before the court and a jury and the jury returned a verdict of guilty. The defendant filed a motion for a new trial but in June, 1921, the motion was denied and judgment of condemnation and forfeiture was entered.

Apparently, no fine or other punishment was imposed and the water was released to the claimant on the payment of costs and the execution of a bond for $100.—[*Notice of Judgment No. 10172; issued May 12, 1922.*]

Correspondence

ACCIDENTS FROM LOCAL ANESTHETICS

To the Editor:—Reports that have come to the attention of the Committee for the Study of Toxic Effects of Local Anesthetics show that accidents or fatalities from the use of local anesthetics are at times due to errors in which cocain is substituted for procain, or cocain is used in far greater concentration than that directed by the surgeon, or to other similar errors. In order that the cause of such accidents may be definitely established, the American Medical Association Chemical Laboratory has offered to examine for the committee local anesthetic preparations, the identity or the composition of which is in doubt. Those who wish to report accidents of this character to the committee are asked to forward the specimens in question in sealed containers, accompanied by a detailed statement of the accident, to the A. M. A. Chemical Laboratory, 535 North Dearborn Street, Chicago. The laboratory, after examining the preparations, will submit its findings, together with the report of the accident which accompanied the specimen, to our committee.

Emil Mayer, M.D., 40 East Forty-First Street, New York.
Chairman, Committee for the Study of Toxic Effects of Local Anesthesia.

THE MODIFIED PNEUMOCOCCUS VACCINE OF ROSENOW

To the Editor:—While a member of the John McCormick Institute for Infectious Diseases, Chicago, I discovered that antibodies appear more rapidly in the blood following the injection of partially autolyzed pneumococci ("pneumococcus antigen") than following the injection of heat-killed pneumococci.

Through the cooperation of Dr. Ludvig Hektoen, director of the institute, and of physicians at the Presbyterian and Cook County hospitals, the effect of this antigen on the course of lobar pneumonia, as compared with alternate untreated cases, was studied for three consecutive years. The mortality rate was lower in the treated than in the control series. Subsequent studies have corroborated these results.

During my studies on the bacteriology of influenza in 1918-1919, I prepared, from the freshly isolated strains of bacteria, mixed vaccines which appeared to be valuable in prophylactic inoculation against the more serious respiratory infections in influenza.

The burden of the preparation and distribution of these substances became so large that it seemed best to turn the work over to a commercial firm, and, of course, without financial return to me or to the Mayo Foundation. This was done after I felt satisfied that the details and principles involved, as set forth in published reports, would be fulfilled. It was hoped that information as to the efficacy of the preparations might be obtained, and that relief of human suffering would result pending the evolution of better methods.

I have found since that samples of the antigen obtained in the open market have fallen short of the original requirements, and that information regarding the use of the antigen and the mixed vaccine has not been forthcoming. Moreover, the impression seems to have spread among physicians that I advocate the use of ordinary bacterial vaccines in the treatment of acute infections. The only statement I have made which perhaps might be so construed appeared in my paper, "Prophylactic Inoculation Against Respiratory Infections in Influenza" (The Journal, Jan. 4, 1919, p. 31), which was in the nature of a reply to many inquiries regarding the use of the vaccine in the treatment of influenza. The statement reads: "Since the severe complications in influenza, such as pneumonia, do not usually begin until the fourth day or later, the vaccine, if given at the onset of the disease, might reasonably be expected to afford some protection." It will be seen that I advocated the use of the vaccine as a prophylactic.

It is the purpose of this letter to inform physicians that, while I still believe in the efficacy of partially autolyzed (detoxicated) pneumococci in the treatment of lobar pneumonia, and in the use of properly prepared bacterial vaccines for prophylactic inoculations and in certain chronic conditions, I do not advocate the latter in the treatment of acute infections, and that henceforth the use of my name in connection with these commercially prepared products will be contrary to my wishes and without my consent.

E. C. Rosenow, M.D., Rochester, Minn.

RECOVERING TUBE FROM PLEURAL CAVITY

To the Editor:—In The Journal, April 16, 1921, page 1078, Dr. Frank Holyoke says that nowhere in medical literature has he seen any easy method for recovering with safety a rubber drainage tube lost in the pleural cavity. He then describes his method of recovering tubes by saying that the specific gravity of the tube is 0.98, and if the patient is placed on his sound side with the diseased side up and then the diseased pleural cavity is filled with physiologic sodium chlorid solution, the tube will float on top of the solution near the aperture and can be easily removed. If any surgeon has been so unfortunate—as I have—to lose a tube in draining the pleural cavity, I would not advise such a procedure. I did it once and almost lost my patient from asphyxia, and still did not get the tube.

A safe and easy plan is to place the patient on a table under or over a fluoroscope, whereupon the drainage tube can be seen. Then with a long pair of bent metal forceps introduced at the aperture both metal forceps and drainage tube are visible. The forceps can be guided directly to the drainage tube under the fluoroscope, and the tube grasped and withdrawn.

L. M. Whitsitt, M.D., Fort Worth, Texas.

"TREATMENT OF THROMBO-ANGIITIS OBLITERANS"

To the Editor:—In The Journal, November 18, appeared a paper by Dr. Samuel Silbert, who states that to his knowledge the injection of alcohol into the nerves for the relief of pain in thrombo-angiitis obliterans has heretofore not been used. In the neurologic service of Dr. William M. Leszynsky at Lebanon Hospital, cases of thrombo-angiitis and allied conditions have been treated by a method similar to that advocated. For the last six years four or five cases have been treated in this manner with temporary relief. The principle of alcohol injection into nerves for the relief of pain is not new, as Dr. Silbert admits, and the injection into the anterior tibial, plantar nerves, etc., is not an unusual procedure in neurology.

Joshua H. Leiner, M.D., New York.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

ACCIDENTAL GONORRHEAL URETHRITIS LEGALLY CONSIDERED

To the Editor:—I should like some information as to the possibility of accidentally acquiring gonorrheal urethritis in the presence of an active case in which the patient uses the same utilities. Can you refer me to any cases on record, or to any court decision relative to acute gonorrhea in the husband being accepted as evidence of adultery on his part? Please omit my name.

PHYSICIAN, Ohio.

ANSWER.—No reference is at hand of any duly verified case in which a patient has contracted gonorrhea from the use of a water closet, urinal, wash-basin or bath-tub. Obviously, however, the statements of interested parties that they have so contracted the disease are insusceptible of verification. The spread of gonorrheal vaginitis among infants and children in institutions, however, is not uncommon; but under such circumstances the disease is usually regarded as transmitted by wash cloths rather than by the toilet fixtures named in the foregoing.

It has been held that "It is prima facie evidence of adultery that a husband long after marriage is infected with a venereal disease" (14 Cyc. 697). In support of this position is cited *Johnson* v. *Johnson*, 14 Wend (N. Y.) 637. See also *Clark* v. *Clark*, 7 Robert (N. Y.) 276. Not quite so strong, however, is the statement that "the defendant's unexplained infection with a venereal disease, while a strong circumstance, is hardly sufficient to justify the inference of guilt," 4 Encyc. of Evidence 763. See authority cited.

Affliction with a disease within so short a time after marriage that might have been contracted prior thereto is not sufficient to establish adultery as against his [the husband's] sworn denial (*Mount* v. *Mount*, 15 N. J. Eq. 162, 82 Am. Dec. 276). In this case, proof that a husband was so afflicted within six months after marriage was held insufficient.

PURIFICO

To the Editor:—Having met several times lately in my practice a preparation called "Purifico" manufactured by C. W. Diffin, Mfg. Chemist, Succeeding The Purifico Co., and E. E. Burnside, M.D. Laboratories, Buffalo, N. Y., Bridgeburg, Ont., Canada, and Ashville, N. Y., should like to know the composition of same so that I can talk intelligently about it. There are three solutions for internal medication. They are all muddy, inelegant mixtures and put up in typical patent medicine packages. They are being strongly advertised as a cancer cure.

E. V. HARDWICK, M.D., Boston.

ANSWER.—Burnside's "Purifico" has been the subject of an investigation by the federal authorities. According to the federal chemists, "Purifico No. 1" was found to contain 10 per cent. of alcohol with sugar, small amounts of glycerin, potassium iodid, cinchona alkaloids, piperin and probably senna. "Purifico No. 2" was reported to contain 9 per cent. of alcohol, sugars, small amounts of glycerin, potassium iodid, cinchona alkaloids and piperin. "Purifico No. 3," the chemists reported to contain 14 per cent. alcohol, sugars, valerian, piperin and tannic acid. The concern claimed that Purifico was a remedy for cancer, tumors, goiters, erysipelas, etc. These claims, the government declared were false and fraudulent. Charles W. Diffin and Pearl Diffin who did business as the Purifico Co., made no attempt to justify these fraudulent claims but, on Nov. 27, 1917, pleaded guilty and the court imposed a fine of $25. An abstract of the government's report appears in "Nostrums and Quackery," Vol. 2.

PEMPHIGUS AND ITS PROGNOSIS

To the Editor:—In THE JOURNAL, November 11, under the heading "Pemphigus Neonatorum," was the following question and answer, which seems to me misleading, and open to criticism:

> "In a recent book pemphigus is given a good prognosis. Please discuss. . . ."
>
> "ANSWER.—The prognosis is favorable if the process confines itself to the superficial layers of the skin. If the deeper layers are attacked, abscesses and general sepsis result."

In the first place, the question and answer seem to confuse pemphigus neonatorum and pemphigus. Pemphigus neonatorum is used in the heading, but in the text apparently both questioner and answerer are writing about pemphigus, a very different thing. A favorable prognosis in pemphigus is a new idea to me, and the depth of involvement of tissue as influencing the prognosis is equally novel. Pemphigus is always a grave disease, and it is essentially a superficial involvement of the skin, which does not require the help of secondary infection to give it a bad prognosis.

The answer might be stretched as possibly covering the situation in pemphigus neonatorum. But that also is a grave disease, and it kills by sepsis without necessarily causing abscesses or deep involvement of the skin.

W. A. PUSEY, M.D., Chicago.

WESTERN MEDICAL ASSOCIATION'S NOSTRUM FOR EPILEPSY

To the Editor:—Enclosed please find literature from the so-called Western Medical Association, which claims wonderful things in the way of treatment for epilepsy. Several individuals in my practice have asked me about the merits of this company and I have told them, I did not think much of it. I have seen one patient who had been taking this treatment. . . . However, this treatment did not stop her seizures and I told the parents that I did not know anything of the nature of this cure but did not believe in it.

EVERT OSTLING, M.D., Lewellen, Neb.

ANSWER.—The "Western Medical Association" sells, on the mail-order plan, an alleged remedy for epilepsy which contains, as its essential drug, phenobarbital (luminal). The matter was dealt with in the Propaganda department of THE JOURNAL, Jan. 28, 1922, and has been reprinted in the pamphlet "Epilepsy 'Cures and Treatments,'" price 15 cents.

TEKARKIN AND THE BIOCHEMICAL LABORATORIES

To the Editor:—Inclosed herewith please find a copy of *Pharmaceutical Leaves* published by the Bio Chemical Laboratories. We would like to have your opinion on this publication and the drug herein described.

F. M. HAYES, M.D., Iota, La.

ANSWER.—*Pharmaceutical Leaves* is an advertising sheet of Edward Percy Robinson, who exploits "Tekarkin" as a remedy for cancer. Both Robinson and his nostrum were dealt with in the Propaganda department of THE JOURNAL, May 28, 1921, and the matter is reprinted in the pamphlet "Cancer Cures and Treatments" (price 15 cents).

THE GRAHAM SANITARIUM AND "NEUTROID TABLETS"

To the Editor:—Would you kindly give me any information you may have regarding the Graham Sanitarium, Inc., New York, also the Neutroid Tablets which he puts out for obesity. I have a patient who has been taking these tablets, and I would like a little more information to back up my statements that they are a snare, and a fake.

HOWARD W. JEWETT, M.D., Lowell, Mass.

ANSWER.—The Graham Sanitarium and "Neutroid Tablets" were dealt with in the Propaganda department of THE JOURNAL, Sept. 30, 1922.

"NOSTRUMS IN RETROSPECT"

To the Editor:—In THE JOURNAL of February 16, 1918, there was an article on the "Hypophosphites" under the heading "Nostrums in Retrospect." This was Article 6. I would like to know if they were published in book form.

A. T. EMMERSON, M.D., C.M., Goderich, Ontario.

ANSWER.—The entire series of articles on "Nostrums in Retrospect" are reprinted in the recently issued "Propaganda for Reform," Vol. II, published by the American Medical Association, price $2.

MARMOLA

To the Editor:—I would appreciate a report from your investigating bureau regarding the pharmaceutical content of the Marmola Tablets, manufactured by the Marmola Co., Detroit, Mich. They are advertised as an Anti-Fat tablet.

JAMES S. TAYLOR, M.D., Altoona, Pa.

ANSWER.—This nostrum has been found to contain thyroid. An article on the subject appears in the pamphlet "Obesity Cures" (price 15 cents) prepared and issued by the Propaganda department.

CAROID

In the November 4 issue, page 1629, appeared a reply to an inquiry about Caroid. This item did not indicate the present owners of this product. We are informed that Caroid was sold outright by Mead Johnson & Co. to the Carter Cummings Chemical Co. in June, 1918, and that since that time Mead Johnson & Co. have had no interest in it.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALABAMA: Montgomery, Jan. 9. Chairman, Dr. Samuel W. Welch, Montgomery.

ARIZONA: Phoenix, Jan. 2. Sec., Dr. Ancil Martin, 207 Goodrich Bldg., Phoenix.

COLORADO: Denver, Jan. 2. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

DISTRICT OF COLUMBIA: Washington, Jan. 9. Sec., Dr. Edgar P. Copeland, Stoneleigh Court, Washington.

HAWAII: Honolulu, Jan. 8. Sec., Dr. G. C. Milnor, 401 Beretania St., Honolulu.

ILLINOIS: Chicago, Jan. 9-11. Supt. of Registration, Mr. V. C. Michels, Springfield.

INDIANA: Indianapolis, Jan. 9. Sec., Dr. W. T. Gott, Crawfordsville.

MINNESOTA: Minneapolis, Jan. 2-4. Sec., Dr. Thomas S. McDavitt, 539 Lowry Bldg., St. Paul.

NATIONAL BOARD OF MEDICAL EXAMINERS: Written examination in Class A medical schools. Part I and II, February 12-14 and February 15-16. Sec., Dr. John S. Rodman, 1310 Medical Arts Bldg., Philadelphia. Application for the February examination must be sent in by January 1.

NEW MEXICO: Santa Fe, Jan. 8-9. Sec., Dr. R. E. McBride, Las Cruces.

NORTH DAKOTA: Grand Forks, Jan. 1. Sec., Dr. G. M. Williamson, 860 Belmont Ave., Grand Forks.

OKLAHOMA: Oklahoma City, Jan. 9-10. Sec., Dr. J. M. Byrum, Shawnee.

PENNSYLVANIA: Philadelphia, Jan. 30-Feb. 3. Sec., Mr. C. D. Koch, Professional Credentials Bureau, 422 Perry Bldg., Philadelphia.

RHODE ISLAND: Providence, Jan. 4-5. Sec., Dr. Byron U. Richards, State House, Providence.

SOUTH DAKOTA: Pierre, Jan. 16. Director, Dr. H. R. Kenaston, Bonesteel.

WEST VIRGINIA: Charleston, Jan. 9. State Health Commissioner, Dr. W. S. Henshaw, Charleston.

WISCONSIN: Madison, Jan. 9-11. Sec., Dr. John M. Dodd, 220 E. Second St., Ashland.

Michigan June Examination

Dr. Beverly D. Harison, secretary, Michigan State Board of Registration in Medicine, reports the written examination held at Detroit, June 19-21, 1922. The examination covered 14 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 116 candidates examined, 114 passed and 2 failed. One candidate was licensed to practice as a chiropractor. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
George Washington University	(1914)	81.3
Loyola University	(1921)	80.8
Northwestern University	(1922)	85, 87.5*
Rush Medical College	(1922)	82.1, 86*
University of Illinois	(1922)	81.6
Johns Hopkins University	(1918) 82.8, (1921) 86.3, (1922)	83, 84.3
Harvard Medical School	(1922)	83.2, 85
Detroit College of Medicine and Surgery	(1922)	78.5, 79.9, 80.9, 81, 81.3, 81.3, 82.3, 82.5, 82.7, 83, 83.1, 83.4, 83.5, 84.1, 84.2, 84.7, 85.5, 85.6, 86.6, 87.2
University of Michigan Homeopathic Medical School	(1921)	80.1, (1922) 82.6, 82.7, 83.3, 83.7, 85.7, 87.9
University of Michigan Medical School	(1922)	79.1, 80.2, 80.2, 81.6, 82.6, 83, 83.1, 83.1, 83.3, 83.3, 83.4, 83.4, 83.5, 83.5, 83.5, 83.6, 83.6, 83.7, 83.7, 83.7, 83.9, 84, 84.1, 84.3, 84.3, 84.3, 84.4, 84.5, 84.5, 84.5, 84.6, 84.6, 84.8, 84.8, 84.8, 84.9, 84.9, 85, 85.1, 85.1, 85.2, 85.2, 85.2, 85.3, 85.3, 85.3, 85.4, 85.4, 85.5, 85.5, 85.6, 85.7, 85.8, 85.8, 85.9, 86, 86.1, 86.1, 86.2, 86.3, 86.4, 86.6, 87.2, 87.3, 87.8
Eclectic Medical College	(1922)	79, 81.8
University of Pennsylvania	(1922)	85.4
University of Manitoba	(1921)	83.6
University of Toronto	(1914) 81.3, (1917) 81, (1921)	80.7
Western University	(1920)	82.2
Chiropractor		94.5
FAILED		
Detroit College of Medicine and Surgery	(1922)	74.1
Eclectic Medical College	(1922)	73.9

* This candidate has finished the medical course, and will obtain the M.D. degree after he has completed a year's internship in a hospital.

Texas June Examination

Dr. T. J. Crowe, secretary, Texas State Board of Medical Examiners, reports the oral and written examination held at Austin, June 20-22, 1922. The examination covered 12 subjects and included 120 questions. An average of 75 per cent. was required to pass. Sixty-six candidates took the examination and passed. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Jefferson Medical College	(1921)	79.3
Meharry Medical College	(1922)	76.6, 85.6
Baylor University	(1922) 75.1, 76.5, 81.2, 81.3, 82.1, 82.6, 82.9, 83.3, 84.2, 84.4, 85.5, 85.6, 85.6, 85.7, 86.6, 86.9, 89.3, 89.9, 90.2, 91.3, 92	
University of Texas	(1922)	82.8, 83.3, 83.6, 84.9, 85.9, 85.9, 86.6, 86.7, 86.9, 87.1, 87.2, 87.2, 87.3, 87.6, 88.1, 88.3, 88.5, 88.5, 88.5, 88.8, 88.9, 89, 89, 89, 89.3, 89.4, 89.5, 89.9, 89.9, 91.1, 91.3, 91.3, 91.8, 91.8, 91.9, 91.9, 92.2, 92.3, 92.5, 93.3, 93.8
University of Edinburgh	(1921)	81.3

Book Notices

POLARIS. The Story of an Eskimo Dog. By Ernest Harold Baynes. Cloth. Price, $1.50. Pp. 137, with illustrations. New York: The Macmillan Company, 1922.

This is a common sense, honest book about a dog. Mr. Baynes is a lover of animals; he has contributed extensively to the literature, his works including not only "Wild Bird Guests" and the present volume but many articles contributed to current periodicals. But in addition to a love of animal kind and an ability to present animal life realistically in his writings, he has a rationality that is not dominated by passion. In his preface to the story of Polaris he defines his point of view:

> Writers who cater to the oversentimental by attributing to dogs, cats and other animals thoughts and actions possible only to human beings, are doing many of their readers a very grave injury. They are not only teaching false natural history, which is bad enough in itself, but they are creating and fostering among unthinking people an unhealthy sentimentality which often leads eventually to zoophil psychosis, a form of mental disease in which the patient's love of animals becomes distorted, if not absolutely dangerous to those around them. Sick cats give more concern than sick children; the welfare of a guinea-pig is of more consequence than that of many babies. It is the author's belief that the reader and the publisher should demand from those who write about animals either the truth or a label to inform the purchaser that he is buying fiction. . . . There is a movement now on foot for sane humane education. Let us love and be kind to animals for what they really are—many of them are worthy of all we can do for them—but, in the name of sanity and real humanity, let us avoid that morbid condition of mind in which animals appear to be more intelligent and of greater consequence than our fellow men.

Polaris was a puppy descended from members of the team that took Commander Peary to the North Pole. He adopted Mr. Baynes as soon as he was introduced to him. Mr. Baynes describes the rearing of Polaris, his friendships with Beowulf, a great Dane, and Heatherbloom, a "Scottie," and his battles with predatory hounds of the vicinity. The story is natural; there is enough of interest, and enough of humor, in the lives of men and animals to make the story interesting without artificial coloration. The reader who does not enjoy the account of Polaris' pursuit of the rooster simply does not have a sense of humor. The book is well printed, and profusely illustrated with photographs. It is an ideal gift book for physicians who are lovers of animals. Moreover, its author merits the sympathetic support of every scientist.

CANCER OF THE BREAST AND ITS TREATMENT. By W. Sampson Handley, M.S., M.D., F.R.C.S., Hunterian Professor of Surgery and Pathology in the Royal College of Surgeons of England. Cloth. Price, $7.50 net. Pp. 411, with 82 illustrations. New York: Paul B. Hoeber, 1922.

In spite of the still gloomy outlook for cancer in general, there is little doubt that the outlook for breast cancer in particular is much brighter than it was ten years ago, in view of the greatly increased number of lasting cures reported. Were the fundamental facts of pathology and the principles of treatment so brilliantly exploited by Handley understood by every man attempting the treatment of the disease, there would be a still further reduction in the mortality rate. The author unfolds his subject matter in a way that differs from that of an author of the average surgical monograph. His central theme is thus expressed: "I have regarded the questions of etiology, pathogenesis and diagnosis as beyond the

scope of this work, the aim of which is to present for the surgeon's use a careful picture of breast cancer, of its microscopic ramifications, and of its mode of dissemination. . . . The operator's eye can no more delimit the invisible margin of the growth with which he has to deal than it can see the bacteria he aims at excluding from his wounds. . . . He must rely upon pathology to supply him with the invisible. . . . Upon the accuracy of these mental conceptions his operative results must to a large extent depend." The first half of the work is devoted to pathology, with chapters on the inadequacy of the embolic theory, clinical and microscopic study of parietal dissemination, routes of lymphatic dissemination, visceral dissemination and natural processes of repair in carcinoma. The histopathology is minutely covered. The author devotes a material part of the work to the manner of growth and of dissemination, points of information so necessary to intelligent operative treatment. His chapters on the lymphatics and their permeation by cancer offer a wealth of information on the histopathology of the disease. Most American surgeons will take issue with the author for removing so small an amount of skin. Since skin, embryologically is an ectodermal structure, we feel that it should be as widely removed as fascia, even though primary closure without grafts or plastic repair is thereby made difficult or impossible. Some one has remarked that the surgeon should have his assistant close his breast incisions, that easy closure may not be a factor in tempting him to leave skin that would better be removed. The review of the subject of Paget's disease is in itself a complete monograph, and may justly be regarded as authoritative. The author does not consider clinical diagnosis. This is important to the man not familiar with methods of examining the breast; it is very necessary to him who, through lack of training or experience, must make his diagnoses from clinically evident cancer. But the diagnosis and treatment of cancer are not for the tyro. In defense of this omission, it may be said that this book will find its greatest use in the hands of the surgeon rather than of the general practitioner; in the hands of the man who realizes that the hope of cure is tenable only when the lesion is detected before a positive clinical diagnosis can be made. It is a masterful work.

DE ARTE PHISICALI ET DE CIRURGIA OF MASTER JOHN ARDERNE, SURGEON OF NEWARK, DATED 1412. Translated by Sir D'Arcy Power, K.B.E., M.B., F.R.C.S., from a Transcript Made by Eric Millar, M.A. From the Replica of the Stockholm Manuscript in the Wellcome Historical Medical Museum. Cloth. Price, $4. Pp. 60, with 16 illustrations. New York: William Wood & Co., 1922.

This volume, published under the auspices of the Wellcome Historical Museum, is a translation of the ancient manuscript of John Arderne, a physician who practiced at Newark in England, during the fourteenth century. Among other things, John Arderne taught that wounds should heal without suppuration, and that dressings should be infrequent. In his drug therapy, however, he was addicted to all the spells, incantations, herbs and nasty substances in common use during his time. The present edition is printed on a large page with numerous facsimile reproductions of pages of the original manuscript, which is now in the royal library at Stockholm. In the preface, Sir D'Arcy Power supplies a learned comment, and there is an adequate index. The book gives an excellent picture of the practice of medicine in England during the fourteenth century.

DIE VITAMINE. Kritische Uebersicht der Lehre von den Erganzungsstoffen. Von Ragnar Berg, Leiter des physiologische-chemischen Laboratoriums auf Weisser Hirsch. Paper. Pp. 336. Leipsic: S. Hirzel, 1922.

This book contains one chapter on the biologic value of different proteins, one chapter on the rôle of the inorganic substances in foods, one chapter on beriberi and polyneuritis, one chapter each on vitamins A and C, and chapters on the requirements for growth, edema and pellagra. There is a good index, and a very good bibliography (nearly 1,600 titles). The author is well known through his important investigations on the metabolism of the inorganic food substances. The chapter on this subject is accordingly a most valuable contribution. The subjects of the other chapters in the book are treated with equal thoroughness, comprehensive knowledge of facts, and sound critical analysis. The volume is a real contribution to medical science, and should, accordingly, be in the hands of every physician who can use the German language.

AIDS TO BACTERIOLOGY. By William Partridge, F.I.C., Lecturer in Chemistry (Public Health), University of London, King's College. Fourth edition. Cloth. Price, $1.75 net. Pp. 276. New York: William Wood & Co., 1922.

The contents of this book are indicated by its title. All of the common pathogenic micro-organisms and many of the more uncommon ones are given brief consideration in a manner apparently designed to emphasize their essential characteristics. The author has accomplished his task in a satisfactory way. The book is not to be recommended as a class textbook, but it should find favor as a reference work for laboratory workers.

ARABIC AND LATIN ANATOMICAL TERMINOLOGY CHIEFLY FROM THE MIDDLE AGES. By A. Fonahn. Paper. Pp. 174. Christiania: Jacob Dybwad, 1922.

This book is a vocabulary of Arabic and "Latino-Barbarous" terms used in old medical works. It will be of great value to students of medical history as well as to philologists interested in Arabic and medieval Latin.

Miscellany

CONFERENCE BOARD OF PHYSICIANS IN INDUSTRY

Among the questions discussed at the thirty-fifth meeting of the Conference Board of Physicians in Industry, held November 18, were dental work in industry, inguinal hernia and an outline for making physical examinations.

DENTAL WORK IN INDUSTRY

An instance was reported in which prophylactic dental work had been carried on for a few years among 550 employees, among whom there had been no emergency treatments necessary during the past year.

Dental work in industry is justified for two reasons: (*a*) constitutional, in ridding the body of foci of infection, and (*b*) cosmetic in improving the appearance of the individual. It is realized that the economic effect is one of major importance, but difficult to measure with any degree of accuracy.

INGUINAL HERNIA

One case of possible traumatic inguinal hernia of recent occurrence was reported. In the experience of the other physicians present, no case of traumatic inguinal hernia had ever been known.

It was the consensus that as true traumatic hernia is rare and of negligible importance from the standpoint of the industrial physician, the development of inguinal hernia should be considered an occupational disease, and compensation should be paid on the basis of aggravation of a preexisting condition rather than as the result of a definite injury.

Pain has no relation to the size of the hernia sac as suggested, but is related to the amount of pressure that the sac makes on the ilio-inguinal or iliohypogastric nerve. This explains why small hernias may be more painful than others of much larger size.

It was brought out that recurrences after operation may be due to rupture of the tissues along the line of stitches closing the original hernia. Many cases of this type are considered recurrences at the original site of operation. Another cause of recurrence is the overlooking of a small indirect hernia which may be coincident with a larger direct hernia. Following operation for the direct hernia, the indirect may increase in size and be taken for true recurrence of the direct type.

PHYSICAL EXAMINATION OUTLINE

The standard physical examination outline developed by the Conference Board of Physicians in Industry early in its work has undergone slight revision as a result of the more extended experience of the members. This outline is to be

used as a guide by physicians when making physical examinations in order that important matters may not be overlooked. Its adaptation as a form for recording physical findings is purely optional with the examiner.

In the making of physical examinations, it is realized that in many cases and for many purposes, only a partial examination will be necessary, and that, barring special cases, the examination would need to consume only an average of from six to ten minutes for each person. It is also understood that the procedure may be added to or subtracted from as the peculiar requirements of each industry may make advisable in the judgment of the examining physician.

VENEREAL DISEASE CONTROL IN PARAGUAY

Even as late as the seventies, medical science was virtually nonexistent in Paraguay, says Dr. Victor Idoyaga in his book "La Lucha Antivenérea en el Paraguay." During the war with Brazil and Argentina (1870) an English physician, Dr. Stewart, surgeon-general of the army, assisted by an English pharmacist, Mastermann, first introduced really useful drugs and comparatively new methods of treating disease. Shortly afterward foreign physicians arrived, and as the isolation of their country under the dictator Francia had ended, Paraguayans began going to Argentina and Uruguay to study. The antivenereal disease campaign really began with the appointment of the first Paraguayan venereologist, Dr. Luis Zanotti, as professor of syphilology and dermatology in the Asunción Medical School. Both in his classes held in the army hospital and in public lectures, from 1901 on, he preached venereal prophylaxis and suggested the creation of a venereal dispensary. In 1918, when Dr. Idoyaga returned from France, he suggested at once to the health authorities the opening of an institute of venereosyphilitic prophylaxis. This was finally opened in August, 1919. The attendance from August, 1919, to Dec. 31, 1919, was 1,119 patients; in 1920, 4,785; during the first six months of 1921, 3,545. The institute is divided into four sections: venereosyphilitic, venereogynecologic, laboratory and hospitalization. The staff includes two physicians and six assistants (advanced medical students). Charges for treatment are rather high, 200 pesos for a Wassermann test; administration of arsphenamin, 60 pesos; vaccine treatment, 50 pesos; vaginal irrigation, 15 pesos. Prostitution is under reglementation, and the institute is charged with the examination of public house inmates. Adenitis is a complication unusually frequent in cases of chancre. Among skin diseases most prevalent in Paraguay are eczema, seborrhea, itch, pediculosis, impetigo, ecthyma and leprosy. Mycoses, psoriasis, ringworm, lichen, lupus and all forms of surgical tuberculosis are rare.

RATS IN OUR ATLANTIC COAST CITIES

The U. S. Public Health Service recently published a bulletin (No. 121) on the "Rodent Infestation and Rat Proofing Conditions in Massachusetts Seacoast Cities, New York City and Baltimore." It was said: "By a strange and unexplained condition, the eastern seacoast of the United States, from Florida to Maine, has up until the present reported no human or rodent plague. With the exception of the northern and northwestern seacoast of Norway, this is the longest stretch of seacoast in the world that has not within the last few years reported plague along its shores. It would seem, therefore, that if chance alone controlled the question of the appearance of plague, this eastern seacoast of ours would be due to be visited very shortly by plague in some form or other. Accordingly, it is not only wise but very necessary that the cities along the seacoast should take heed unto themselves to do all within their means that it is possible to do to head off and prevent the impending danger to themselves." All of the cities surveyed were found heavily infested with rats, and their wharves generally well adapted to the spread of plague should it be introduced by ship. It was estimated that only 15 per cent. of the docks about New York City are rat proof.

Medicolegal

Evidence in Action by Physicians for Services

(Boyd et al. v. E. O. Painter Fertilizer Co. (Fla.), 91 So. R. 357)

The Supreme Court of Florida, in reversing a judgment rendered in favor of the defendant, says that the plaintiffs, two physicians, brought this action to recover $1,000 for performing a necropsy; $1,000 for office advice, conference and consultations from May 22 to June 16, and from June 25 to July 1; and $3,600, or $400 a day, for services during absence on a trip to Baltimore and a trip to New York from June 16 to June 25; making a total of $5,600. The necropsy was performed following the death by drowning of the president of the company, May 13, and was for the purpose of establishing, if such was the fact, that his death was from natural causes, he carrying at the time a large amount of life insurance in which the defendant had an interest of about $150,000. Besides this trip to Baltimore, it appeared from the testimony that, the day after the necropsy, parts of the body had been removed and sent to experts in Baltimore for chemical analysis and pathologic examination, and that the plaintiffs were sent there to remain while the specialists made the examinations, their expenses and services while so engaged being paid for by the defendant. One of the plaintiffs had originally been called over the telephone by the cashier and bookkeeper of the defendant to be present when the body was recovered to see if it could be resuscitated. Both of the plaintiffs testified that they were authorized by the defendant's secretary to perform the necropsy. One of the plaintiffs testified that the cashier and bookkeeper had stated: "I am authorized to say, 'Go ahead with the necropsy,' but if you want further confirmation, we will get it." The other plaintiff testified that the defendant's secretary, the decedent's daughter, and the cashier and bookkeeper gave their consent to the necropsy, the cashier and bookkeeper in writing. This, with other evidence, raised an issue as to whether there was any liability of the defendant company to pay for the services in performing the necropsy, by reason of the authority that the plaintiffs testified had been given them by the secretary of the corporation, and denied by him; or whether the company by its subsequent acts had ratified the alleged acts of the secretary in this matter, and what, if anything, was a reasonable compensation for such services; which the court thinks should have been submitted to the jury.

During the progress of the trial, the plaintiffs offered in evidence the written authority from the daughter of the deceased, dated May 22, "to hold a necropsy on the body of E. O. Painter and to remove such specimens as they may see fit for pathologic examination." The purpose of introducing this document in evidence was not to establish the liability of the defendant company, but to show that the physicians did not mutilate the body of Mr. Painter without authority from his wife and only child, who alone could give such authority. The defendant company could obligate itself to pay for the physicians' services in performing the necropsy, but it could not authorize them to mutilate the body. To do this, the physicians needed authority from the family. It was to relieve themselves from an imputation of having mutilated the body without such authority, which might have some effect in prejudicing the jury against the plaintiffs, that this document was offered in evidence; and it was proper for this purpose, and the trial court erred in excluding it.

The services for which the plaintiffs were suing terminated, July 1. July 7, they wrote to the decedent's daughter a letter containing a proposition to render future professional services as experts in her behalf in the case of litigation over the insurance policies. The amount charged, the character of the proposition and the tone of the letter would have a tendency to create a feeling of hostility against the writers, and served no purpose in throwing light on antecedent circumstances. The only reference to the past was that, as one of the conditions for accepting the new employment, all bills then due should be paid in full. The offer was not accepted, and, as it shed no light on the past transactions that were the subject of the lawsuit, it was not only irrelevant and imma-

terial, but had a tendency to prejudice the jury against the plaintiffs. The trial court erred in admitting this letter in evidence, and the error was injurious to the plaintiffs.

Fallen Women as a Constant Pathologic Danger

(Ex parte Carey (Calif.), 207 Pac. R. 271)

The District Court of Appeal of California, Third District, in remanding the petitioner, who sought to regain her freedom through a writ of habeas corpus, after she had been committed to the California Industrial Farm for Women, in conformity with the provisions of Section 8 of the Act of 1919, establishing the farm, says that the question was narrowed down to this: Does the state have the lawful right to seize its fallen women and confine them for purposes of reformation and assistance? That it may seize and confine minors, morons, lunatics and persons addicted to the excessive use of drugs and liquors was not questioned. The first and last enumerated classes are confined solely for purposes of reformation and assistance. But it was insisted that the state, if it confine its fallen women, for purposes of reformation, should make like provision for dealing with those of the opposite sex; that the act was discriminatory in that it applied only to women. However, the relation sustained by the fallen woman to her business and society at large is altogether unlike that sustained by her partner in crime. She follows a business that can be carried on only by women. The most casual observer cannot fail to see a vast difference between fallen women as a class and the balance of human kind. They stand apart. No other body of malefactors constitute so distinctly a class as do fallen women. They present a greater single element of economic, social, moral and hygienic loss than is the case with any other single criminal class. Not only do they constitute a menace to the morals and social welfare of mankind; they carry unusually heavy pathologic liabilities. From the standpoint of public health, they are sometimes referred to as pestilential and their places of abode as pesthouses. The law declares them to be a public nuisance. Altogether, they present the most perplexing problem with which modern penology and social legislation are called on to deal. The fallen woman occupies a relation to society analogous to that of the chronic typhoid carrier—a sort of clearing house for the very worst forms of disease. The right to quarantine persons suspected of contact with infectious diseases is uniformly upheld by both state and national governments. The right to quarantine at all implies the right to continue the isolation so long as the danger remains. That a woman carrying on the business denounced in the statute is a constant pathologic danger, no one would question. If this is true, the fact implies the right to seize the offender and detain her, not only for mere purposes of temporary quarantine, but also for the laudable purpose of reclaiming her and destroying the probability of a subsequent renewal of the danger. The law appraises her as so steeped in crime and in so exceptional an environment that ordinary methods of reformation and escape are impossible. The state combines both altruism and self-preservation.

Attendance at Office Is "Medical Attendance"

(Tunnard v. Supreme Council of Royal Arcanum (N. Y.), 194 N. Y. Supp. 707)

The Appellate Division of the Supreme Court of New York, Second Department, affirms an order which set aside a verdict that was rendered in favor of the plaintiff on a policy of life insurance, and does so because at the time the insured applied, in March, 1918, for reinstatement he represented and warranted that he had not received medical treatment of any kind within the year preceding, whereas in February, 1918, he twice called on a physician at his office and received prescriptions. The court holds that to constitute medical attendance it is not requisite that a physician should attend the patient at his home. An attendance at his office is sufficient. The statement made by the insured to the effect that he had not received medical treatment at any time within one year was therefore false, and a false statement as to whether an applicant for insurance has consulted or been attended or treated by a physician is material to the risk and will defeat a recovery, especially when it is warranted to be true.

Society Proceedings

COMING MEETINGS

American Physiological Society, Toronto, Canada, Dec. 28-30. Dr. Chas. W. Greene, University of Missouri, Columbia, Secretary.
Medical Society of the District of Columbia, Washington, Jan. 3, 1923. Dr. C. B. Conklin, Medical Science Building, Washington, Secretary.
Philippine Islands Medical Association, Manila, Dec. 20-22, 1922. Dr. I. Concepcion, College of Medicine and Surgery, Manila, Secretary.
Porto Rico, Medical Association of, Ponce, Dec. 15-17. Dr. Augustin R. Laugier, San Juan, Secretary.
Society of American Bacteriologists, Detroit, Dec. 27-29. Dr. A. P. Hitchens, Army Medical School, Washington, D. C., Secretary.

SOUTHERN MEDICAL ASSOCIATION

Sixteenth Annual Meeting, held at Chattanooga, Tenn., Nov. 13-16, 1922

(Concluded from page 2030)

Aplastic Anemia: Differential Diagnosis of Anemias Due to Hemolysis, and Those Due to Hematopoietic Degeneration

DR. BRYCE W. FONTAINE, Memphis, Tenn.: Aplastic anemia, although rare, occurs with sufficient frequency to render difficult its diagnosis from several commoner diseases of the blood and abdominal viscera. It is possible to differentiate all of the severe anemias by a correlation of all the physical signs, analysis of the gastric contents, quantitative estimation of the bile pigments in the duodenal contents, feces and urine, the bleeding time, the resistance of the red cells to various dilutions of salt solution, the presence of skeined and reticulated cells, when the blood is stained with cresyl blue, the total and differentiated blood count, hemoglobin reading, the color index, the platelet count, roentgen-ray study of the stomach and cecum for filling defects, study of the bone marrow obtained by bone puncture, and least important of all, the study of the stained blood smear.

Acute Otitis Media in Children

DR. JOSEPH B. GREENE, Asheville, N. C.: I would emphasize the difference in the anatomy of the temporal bone and adjacent structures of infants and children from that of adults; our duty in urging all measures possible for the prevention of middle ear diseases, and the importance of instituting prompt and appropriate treatment as soon as symptoms arise, and the importance of early incision of the drum membrane without waiting for all the cardinal symptoms and the marked changes in the tympanic membrane, keeping in mind the fact that it is safer to operate a day too early than an hour too late.

Direct Intubation in Neglected and Desperate Cases of Tracheal and Bronchial Diphtheria

DR. CLYDE E. PURCELL, Paducah, Ky.: With direct intubation and bronchoscopy, we can practically eliminate tracheotomy in the management of diphtheritic stenoses. If a patient has no lung complication or kidney involvement, and is not profoundly septic from absorption of toxins, the two means at hand, together with massive doses of antitoxin, ought to save a great majority of these patients. So far, I have been able to save every one of my own.

Eye Lesions of Nasal Origin

DR. JOSEPH D. HEITGER, Louisville, Ky.: In all eye lesions, regardless of possible etiology, one must be ever mindful of the nasal sinuses as a possible source. Repeated careful examinations with proper illumination are often necessary to disclose small, easily overlooked changes in the postethmosphenoidal district which may be productive of ocular lesions. Early differential diagnosis and complete comprehensive operation, when treatment fails to produce rapid results, are of great importance in the prognosis of ocular lesions of nasal origin.

Surgical Treatment of Diseases of the Gallbladder

DR. IRVIN ABELL, Louisville, Ky.: In eighteen of 411 cholecystectomies in my series, a previous cholecystostomy had been performed. Some of these had been done for chole-

cystitis without stones, but most of them were done for cholecystitis with stones. In three of the cases the stone formation existing at the second operation greatly exceeded that found at the first operation. Of sixty-six patients operated on for common duct stone, seven had had a previous cholecystectomy. In a total of 394 cases, the stones were found in the gallbladder in 339, in the common duct in thirty-one, in the hepatic duct in one case, and in the entire tract in twenty-three cases.

Clinical Observations Following the Use of Mercuric Cyanid in Lenticular Opacities

DR. JOHN H. BURLESON, San Antonio, Texas: All cases showed improvement. Those with metabolic disturbance relapsed. All cases traceable to infection have apparently been benefited. Seventeen of twenty cases studied showed an increased blood sugar percentage. The lowest blood sugar was 1.24 gm. per liter; the highest, 3 gm. Graded glucose tolerance tests in three of these cases showed blood sugar curves similar to those found in early diabetes.

Gallbladder Disease

DR. MARTIN E. REHFUSS, Philadelphia: One always ought to be on guard for possible associated diseases, of which the most common are chronic appendicitis, chronic colitis and chronic lesions of the stomach and duodenum. It is my rule to urge operation when medical treatment fails to produce amelioration of symptoms and fails to produce a cessation of the acute attack; when there are gross deformities in the upper right quadrant, usually demonstrable by the roentgen ray; in the presence of acute inflammatory diseases; in the presence of common duct block, or in the presence of chronic gallbladder disease at the malignancy age.

Low Back Pain

DR. R. WALLACE BILLINGTON, Nashville, Tenn.: Most back pains are to be divided etiologically into five groups: traumatic; postural; diseases (including malignancy) of the lumbar and sacro-iliac regions, skeletal anomalies, and abdominal and pelvic disease. The mild or moderate degrees of trauma are most often sprains of the ligaments of the lumbosacral and lumbar joints. Sciatica and other referred pains are generally due to nerve irritation from disease or trauma in the lower lumbar region, particularly from infiltration or effusion into soft parts about nerve exits. Pain in the postural cases is due to undue muscular and ligamentous strain from faulty attitudes and weak muscles, and is comparable to that of foot strain. Diseases of the lumbar spine, particularly local and diffuse ostearthritis, are probably a more common cause of low back pain than has been believed. The posture of the patient, the attitude of the trunk, and the type of spinal curve are significant as to the location and the nature of the trouble. Genuine disability due to trauma or disease is manifested by definite objective signs, such as voluntary spasm of the lumbar muscles, persistent limitation of the lumbar movements, abnormal lumbar curves, fixed faulty attitude of the trunk, or persistently and consistently guarded movements.

Virulent Diphtheria Bacilli Isolated from Chickens Suffering from Roup

DR. WILLIAM LITTERER, Nashville, Tenn.: This is the first instance, as far as I have been able to find in the literature, in which virulent Klebs-Loeffler bacilli have been isolated from fowls. It is probable that the fowls received their infection from human beings harboring virulent bacilli, since persistent virulent carriers were demonstrated in the families that owned the fowls. Experiments on healthy fowls failed to produce a permanent carrier state. Nothing corresponding to carriers as seen in man was observed. Negative results were also obtained in two fowls suffering with roup.

Pyelitis in Pregnancy

DR. ERASMUS H. KLOMAN, Baltimore: Far too many babies and mothers are lost by watchful waiting, and far too many laparotomies are performed for appendicitis, and gallbladder and pelvic diseases. Ureteral stricture plays a most important rôle in pyelitis which is activated by pregnancy. These cases taken before the patient threatens to abort can be relieved by cystoscopy with pelvic lavage, dilation, and drainage through the natural channels. After labor and the puerperium are over, most of these cases subside, to be followed later by pain in the kidney region, extending to the affected side and bladder, at which time removal of the nidus of infection and dilation of the stricture will effect a permanent cure.

Purpura Hemorrhagica in Pregnancy

DR. GEORGE CLARK MOSHER, Kansas City, Mo.: Infection, while not shown by bacteriologic examination, is so frequently associated in the cases in which purpura and pregnancy coexist that the inference must remain that there is a relation of cause and effect. No drug treatment is of the least practical avail. Transfusion is the only remedy. This is to be followed by the immediate interruption of the pregnancy.

Prepartum Care

DR. THOMAS B. SELLERS, New Orleans: Every pregnant woman with an organic lesion of the heart or pulmonary tuberculosis should be under the direct care of a competent internist, if available. Young married women with organic cardiac lesions, such as mitral stenosis and aortic regurgitation or pulmonary tuberculosis, should be sterilized with their consent. Scientific prenatal care will lower not only the maternal mortality and morbidity, but also the fetal mortality.

Experimental Intraperitoneal Division of One Ureter

DR. WALTER CLINTON JONES, Birmingham, Ala.: Complete division of the ureter is an exceedingly grave occurrence, but is not necessarily fatal. As compared with ureteral obstruction, it is decidedly more serious. The mortality in my experiments on ureteral ligation was 69 per cent. The added danger from an opened ureter is due mostly to the toxemia from absorption of decomposed urine from the tissues outside the urinary tract. The chief symptoms in my animals were anorexia, weakness and diarrhea. Most of the animals were quiet the greater portion of the time. The most striking feature is the activity of the tissues in the vicinity of the severed ureter in preventing the spread of the escaping urine. In some instances the reaction is so prompt that the ureteral opening is sealed at once. More frequently a urinary sac is formed by adhesions between the intestines, omentum, bladder and body wall. This urinary cavity may contract and be obliterated, or may remain unchanged indefinitely or may increase in size; also secondary sacs may develop from the original one. The amount of infection in the peritoneum, retroperitoneal tissues and abdominal wound was surprisingly small. The effects of this operation on the kidney and the ureter are about the same as those of complete ureteral obstruction. During the first two or three months after complete severing of a ureter, it gradually dilates and the kidney suffers cystic enlargement. After three or four months, dilatation still continues in more than half of the animals, while about 44 per cent. show more or less marked general renal atrophy (decrease in size) on the operated side. A kidney in this reduced and quiescent state is, of course, entirely harmless to its possessor.

Food Allergy as a Cause of Irritable Bladder

DR. W. W. DUKE, Kansas City, Mo.: In patients who have frequent painful urination or constant pain over the bladder, the severity of the symptoms is often out of all proportion to the lesions. In patients of this type, the bladder disorder is frequently the result of hypersensitiveness to certain foods which they are in the habit of eating. Since the bladder mucous membrane does not, under ordinary conditions, come in direct contact with alien material, the local symptoms in bladder cases occur only as part of a general reaction after the alien material has entered the body through some distant part in quantity sufficient to give rise to a general reaction. The subjective symptoms resemble those of cystitis, and may be either mild or so severe as to confine the patient to bed. In uncomplicated cases, complete relief may immediately follow the avoidance of the food to which the subject is sensitive, and symptoms may recur when the ingestion of such food is resumed.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Anatomy, Philadelphia

November, 1922, **31**, No. 2

*Studies on Thyroid Apparatus. VI. Response of Submaxillary Glands of Albino Rat to Thyro-Parathyroidectomy and to Parathyroidectomy. F. S. Hammett, Philadelphia.—p. 103.

Studies on Gonads of Fowl. III. Origin of So-Called Luteal Cells in Testis of Hen-Feathered Cocks. J. F. Nonidez.—p. 109.

Studies on Lymph Nodes. I. Structure. T. T. Job.—p. 125.

Branched Tubular and Flask-Shaped Intestinal Glands in Some Domestic Animals. L. Florence, Princeton, N. J.—p. 139.

Vascularity of Enamel-Organ in Developing Molar of Albino Rat. W. H. F. Addison and J. L. Appleton, Jr.—p. 161.

Relation Between Thyroid Apparatus and Submaxillary Glands.—The removal of the parathyroid glands from the albino rat resulted in a marked and valid increase in the size of the submaxillary glands. This result does not follow thyroparathyroidectomy. Hence, in Hammett's opinion, the cause of the enlargement is not attributable to any local irritation produced by the operative procedure. It is possible that the hypertrophy or hyperplasia is a response to an increased functional activity induced by the increased neural irritability resulting from the removal of the parathyroids.

American Journal of Ophthalmology, Chicago

November, 1922, **5**, No. 11

Injury to Cornea and Conjunctiva Due to Fish Bile. F. H. Verhoeff and J. S. Friedenwald, Boston.—p. 857.

Enucleation and Prothesis. D. J. Lyle, Cincinnati.—p. 859.

Case of Lipemia Retinalis. H. H. McGuire, Winchester, Va.—p. 862.

Studies in Monocular and Binocular Accommodation with Their Clinical Applications. A. Duane, New York.—p. 865.

Few of Many Results of Slow, Painless Cyclitis. G. H. Burnham, Toronto, Canada.—p. 878.

Importance of Heterophoria Tests in Routine Refraction. H. H. Briggs, Asheville, N. C.—p. 880.

Perimetry: Variable Factors Influencing Breadth of Color Fields. C. E. Ferree and G. Rand, Bryn Mawr, Pa.—p. 886.

Cabinet for Galvanic Electricity. M. E. Smukler, Philadelphia.—p. 895.

Eikonoscopy. C. D. Jones, Boston.—p. 897.

Velonskiascopy Determination of Principal Meridians of Astigmatism. E. J. Brown, Minneapolis.—p. 897.

Annals of Surgery, Philadelphia

November, 1922, **76**, No. 5

Treatment of Chronic Empyema Where Recognized Surgical Procedures Have Failed to Produce Obliteration. W. L. Keller.—p. 549.

*Pulmonary Fat Embolism. G. E. Sutton, Rochester, Minn.—p. 581.

Surgical Treatment of Hepatic Abscess and Hydatid Cysts Evacuating Via Bronchus. J. O'Conor, Buenos Aires, Argentina.—p. 591.

*Treatment of Fractured Clavicles. W. L. Bell, Oakland, Calif.—p. 595.

Compression Fractures of Lower End of Radius. J. H. Stevens, Boston.—p. 599.

Cases of Arthroplasty of Elbow: Interposed Flap Operation. W. C. Campbell, Memphis, Tenn.—p. 615.

Diagnosis and Treatment of Incomplete Epiphyseal Fractures at Hip. R. Whitman, New York.—p. 624.

Immediate Operation as Method of Choice in Treatment of Fracture of Neck of Femur. A. O. Wilensky, New York.—p. 631.

*Sprains of Rhomboideus Minor Muscle. Study of One Hundred and Fifty Injuries of Shoulder Girdle. J. P. Replogle, Johnstown, Pa.—p. 641.

Pulmonary Fat Embolism.—One outstanding point in Sutton's analysis of cases is that an obese person undergoing a major operation, particularly if it is necessary to destroy fatty tissue, undergoes an added risk. In the greater number of cases the symptoms appear suddenly; they may develop even during the operation. A point of differentiation that has been made between shock and pulmonary fat embolism is that the symptoms of pulmonary fat embolism make their appearance later. This is not necessarily true. Death from pulmonary fat embolism is relatively rapid. Most of the patients in Sutton's series died on the first, second, or third day after operation. Only one patient lived eleven days; one lived six days. A positive diagnosis was made in four cases. The temperature was elevated in all cases. All of the cases were proved by necropsy. Necropsy was not permitted in two other cases in which all the clinical symptoms pointed to pulmonary fat embolism. Stimulative treatment, and saline intravenously, seemed to have little effect.

Treatment of Fracture of Clavicle.—Bell describes a three piece plaster cast which he uses in the treatment of fractured clavicles. One is a solid foundation around the chest, another is a movable unit around the arm, and a third section overlaps the adjoining ends of the first two sections to facilitate accurate and satisfactory relationship between the two units and maintain it with a structure equally strong and dependable.

Sprains of Rhomboideus Minor Muscle.—Examining into the causes of this injury, such as swinging a sledge, firing a furnace, lifting a heavy object, sudden pulling upon objects with arms extended, Replogle found that pain occurs at the end of the pitch of a shovel or at the end of the swing of a sledge; in other words, at the position where the lateral angle of the scapula is raised and the rhomboideus minor is on the greatest tension. Clinically, pain is produced only on those movements which elevate the lateral angle of the scapula, change the angle of the spine, and depress the base of the spine of the scapula, producing tension on the rhomboid muscles. Occasionally there is slight pain and tenderness near the spinous process of the last cervical vertebra at the origin of the rhomboideus minor, and in 30 per cent. of the cases there was slight tenderness along the vertebral border of the scapula below the spine in the region of the rhomboideus major. The treatment is based on anatomic lines to cause relaxation of the overstretched muscle. The shoulders are thrown back so as to lessen the interscapular space and criss-cross adhesive straps are applied maintaining this position. The arm is placed in a sling and a small pad placed under the adhesive over the point of tenderness to possibly hasten the absorption of the serous effusion at the point of rupture or strain. This treatment gives immediate relief from aching, and pain on abduction is greatly reduced. Replogle says that the frequency of occurrence of sprain of the rhomboideus minor, the unusual constant symptomatology and clinical picture, the efficacy of simple and proper treatment, together with the fact that it is of sufficient seriousness to cause industrial disability, demand cautiousness for diagnosis of this lesion.

Archives of Internal Medicine, Chicago

November, 1922, **30**, No. 5

*Interpretation of Wassermann Reaction. W. W. Duke, Kansas City, Mo.—p. 531.

*Studies in Asymptomatic Neurosyphilis. III. Apparent Influence of Pregnancy on Incidence of Neurosyphilis in Women. J. E. Moore, Baltimore.—p. 548.

*Specific Gravity of Urine. T. Addis and M. G. Foster, San Francisco. —p. 555.

*Test of Capacity of Kidney to Produce a Urine of High Specific Gravity. T. Addis and M. C. Shevky, San Francisco.—p. 559.

Studies on Blood Lipoids. I. Relation of Cholesterol and Protein Deficiency to Basal Metabolism. A. A. Epstein and H. Lande, New York.—p. 563.

Distribution of Metabolites in Blood and Tissue. H. Rypins, Minneapolis.—p. 578.

*Quinidin in Auricular Fibrillation with Some Observations on Its Use in Combination with Digitalis. T. S. Hart, New York.—p. 593.

Unusual Paucity of Symptoms in Some Cases of Pontocerebellar Tumors. Diagnostic Difficulties. A. Gordon, Philadelphia.—p. 606.

Osteomalacia. E. P. C. White, Philadelphia.—p. 620.

*Alkali Reserve in "Roentgen-Ray Sickness." R. Golden, Boston.—p. 629.

Analysis of Some of Factors of Variability in Vital Capacity Measurements of Children. D. J. Edwards and M. G. Wilson, New York.—p. 638.

Studies on Respiratory Organs in Health and Disease. VI. Significance of Vital Capacity Test in Pulmonary Tuberculosis, Bronchial Asthma, Pneumonia and an Acute Infection Outside Respiratory Tract. J. A. Myers, Minneapolis.—p. 648.

Effect of Administration of Hypertonic Salt Solution on Blood Volume and Certain Related Blood Constituents. A. L. Barach, New York; W. Mason, Fall River, Mass., and B. P. Jones, Los Angeles.—p. 668.

Interpretation of Wassermann Reaction.—Duke uses a five tube test, two tubes of which are delicate enough to give a positive result almost invariably in patients with active syphilis, two tubes so coarse or insensitive as virtually never to give a false positive, and one intermediate tube. The most sensitive tube (cholesterinized antigen 0.4 per cent., one unit of complement, icewater bath incubation) was found by titration to be approximately eight times as delicate as the least sensitive one (alcoholic extract antigen, two units of complement, icewater bath incubation.) Tube 1 (extremely sensitive) gave a four plus reaction in 95 per cent. of patients in

whom syphilis could be demonstrated by other means; a one to three plus reaction was obtained in four of the remaining 5 per cent. of cases, and a flat negative was obtained in less than 1 per cent. It came out four plus in 31 per cent. of miscellaneous medical cases regardless of diagnosis. Of this 31 per cent. which gave positive tests, syphilis could be demonstrated by other methods in only 32.7 per cent. In other words, 67.8 per cent. were apparently false positives. Furthermore, it was found that of patients who gave a positive reaction in this tube with negative reactions with the coarser ones, apparently 93.5 per cent. were false positives. A positive reaction with a test of this delicacy, therefore, is of no value whatever in the positive diagnosis of syphilis. A negative reaction, however, is very useful in its exclusion. Tube 5, which was relatively insensitive (noncholesterinized antigen with two units of complement and icewater bath incubation) came out positive in 57 per cent. of patients who had syphilis which could be demonstrated by other means. Syphilis was proved positively in 98 per cent. of patients who gave a four plus reaction in this tube. No evidence of syphilis was found in the remaining 2 per cent. A positive reaction with tests of this delicacy (only moderately sensitive) is believed, therefore, to be almost proof positive of syphilis. It is quite apparent, however, that a negative reaction could be of no value whatever in its exclusion. The intermediate Tube 3 (cholesterinized antigen 0.2 per cent. with two units of complement and icewater bath incubation) gave four plus reactions in 75 per cent. of patients with proved syphilis. It came out four plus in 8.5 per cent. of miscellaneous medical cases (including syphilis). Only 7.3 per cent. of this latter group of positives were false positives. Of the miscellaneous cases, however, which gave positive reactions in this tube with negatives in the less sensitive tubes (4 and 5), 30 per cent. were apparently false positives. The dependability of both positive and negative reactions obtained by a test of this delicacy, therefore, would appear to be practically nil.

Influence of Pregnancy on Incidence of Neurosyphilis.—Moore finds that the course of early syphilis is markedly altered by the simultaneous occurrence of pregnancy. In women with late syphilis (of more than one year's duration), the incidence of abnormal spinal fluids is twice as high in a group of sterile women as in a group in which one or more pregnancies have occurred since infection. Almost half of the women who are clinically neurosyphilitic have not been pregnant since infection. Multiparas seem to be less liable to late asymptomatic neurosyphilis than primiparas. It is suggested on the basis of this study that pregnancy is one factor which may partially account for the comparative freedom of women from neurosyphilis.

Specific Gravity of Urine.—The specific gravity of the urine of normal persons was measured by Addis and Foster under varying conditions designed to place a strain on the concentrating activity of the kidney. It was found that not even an approximate idea of the work of the kidney in the excretion of solids could be obtained from the results. It is therefore concluded that specific gravity determinations cannot form part of any method intended to measure the amount of secreting tissue in the kidney.

Test of Kidney Capacity.—A simple test of the capacity of the kidney to produce a urine of high specific gravity is described by Addis and Shevky. In normal persons, after restriction of fluids, the average specific gravity is 1.032 with a standard deviation of $\pm$ 0.00281.

Quinidin in Auricular Fibrillation.—Hart's report is based on a study of fifteen persistent and two paroxysmal cases of auricular fibrillation. These were unselected cases. The drug employed in all the studies has been quinidin sulphate administered in capsules, each containing 0.2 gm. Of the fifteen patients showing persistent auricular fibrillation, five recovered a normal rhythm after the administration of quinidin; in all fibrillation recurred after a longer or shorter period; in four of these quinidin was given again and in each instance the normal pacemaker assumed control of the rhythm. One of these patients still maintains a normal rhythm after an interval of five months; in the other three cases, a third period of quinidin was effective in one and ineffective in the remaining two cases. Flutter, as a transitional mechanism preceding a sinus rhythm, was recorded in two cases. In three other cases the administration of quinidin was followed by flutter (one case) and impure flutter (two cases) but in these cases the sinus never regained its control as a pacemaker. In both paroxysmal cases, sinus rhythm promptly followed small doses of quinidin. In Hart's experience, if quinidin was effective in producing sinus rhythm, this occurred within a few hours, or, at least, not longer than sixty hours after beginning the use of the drug. In none of the cases in which it was effective was more than 3 gm. given. In the cases which did not resume a normal rhythm, quinidin, 1.2 gm. a day, was continued from one to three weeks, but the prolonged administration seemed to have little or no effect.

Alkali Reserve in Roentgen-Ray Sickness.—No evidence that the constitutional reaction following irradiation with roentgen ray is associated with a lowered alkali reserve was found by Golden in several determinations of the plasma carbon dioxid combining power of four patients and in repeated determinations of the plasma carbon dioxid content of three dogs.

Archives of Ophthalmology, New Rochelle, N. Y.

November, 1922, **51**, No. 6

Early Development of Corneal Tubercle (Study in Slit Lamp Microscopy). B. T. Haessler and F. H. Haessler, Philadelphia.—p. 523.
Ocular Sporotrichosis. S. R. Gifford, Omaha.—p. 540.
New Method of Removing Lens in Its Capsule. G. L. Johnson, Durban, Natal.—p. 548.
Blepharochalasis. F. H. Verhoeff and J. S. Friedenwald, Boston.—p. 554.
Therapeutic Use of Uveal Pigment in Sympathetic Ophthalmia. A. C. Woods, Baltimore and A. Knapp, New York.—p. 560.
Place of Ophthalmology in Undergraduate Medical Curriculum. W. G. M. Byers, Montreal.—p. 566.
Simple Operation for Pterygium. L. W. Crigler, New York.—p. 577.
Case of Neuritic Optic Atrophy in Tabetic, with Discussion of Value of Differential Pupiloscope in Such Case. A. S. Tenner, New York.—p. 581.
Bilateral Detachment of Retina in Nephritis of Pregnancy. Reattachment of Retina. E. M. Blake, New Haven, Conn.—p. 586.

Boston Medical and Surgical Journal

Nov. 23, 1922, **187**, No. 21

*Some Problems of Readjustment in Medical Practice. W. B. Cannon, Boston.—p. 715.
*Failing Heart. P. D. White, Boston.—p. 721.
*Treatment of Carcinoma of Esophagus with Colloidal Selenium. E. B. Freeman, Baltimore.—p. 727.
*Pregnancy without Demonstrable Cervix or Cervical Canal. C. J. Kickham, Boston.—p. 732.
Vein Puncture and Intravenous Medication in Infants. W. H. Waters, Boston.—p. 733.
*Case of Secondary Purpura Hemorrhagica with Remarkable Blood Changes. O. H. Standsfield, Worcester, Mass.—p. 734.

Problems of Readjustment in Medical Practice.—Cannon discusses the widening of professional interests; the importance of attacking disease producing conditions; public education as a means of disease prevention; the doctor as a promoter of personal health; the doctor as an interpreter of conditions affecting public welfare and the medical problem in rural communities.

Treatment of Heart Failure.—Speaking of the treatment of heart failure of the congestive type, White says it is essential that, after bringing the heart of a patient with auricular fibrillation under the control of digitalis, it be maintained under that control, giving daily about the amount which is excreted. This is about 1½ grains (0.1 gm.) of the leaf in the average adult, who has been digitalized by about 22 grains (1.5 gm.) in divided doses in two or three days. By maintaining this digitalization a patient may keep at work for years and undoubtedly live longer. There is experimental evidence, and clinical, too, that even when the pulse is regular and fairly slow digitalis does help in failure of the congestive type. Apparently, in addition to its toxic effect to block off stimuli from auricles to ventricles, thereby resting the heart, there is also a direct stimulating action on the ventricular muscle. Such cases of congestive failure respond much less dramatically, however, to digitalis than do patients with auricular fibrillation. White has found that a good leaf in pill form by mouth is the most satisfactory therapeutic

method. There is no virtue of the tincture or of the infusion or of various costly pharmaceutical preparations of digitalis over the leaf itself, provided the leaf is potent. In hospital use the ordinary leaf is one tenth to one fortieth as expensive as various trade preparations, and apparently just as effective. Other drugs of the digitalis series—strophanthus, squill, apocynum and convallaria—are dismissed with the statement that for heart failure of the congestive type they are inferior —all of them—to digitalis. Other drugs, such as strychnin, camphor, caffein, epinephrin, cactus and crataegus, are probably of no value as cardiac stimulants. White does not believe in giving a multitude of stimulants (so called) in infectious disease to "prevent the heart from failing." Besides the use of digitalis in congestive failure there are numerous other important measures: absolute rest in bed while there is failure; morphin if there is pain or great discomfort; barbital or bromids if sleeplessness; diuretics (caffein, diuretin, theocin, calomel) if there is obstinate edema not vanishing with rest in bed and digitalis; reduction in quantity and richness of food (sometimes the extreme limitation of the Karell diet is helpful); catharsis (but not enough to exhaust the patient) and venesection in rare cases.

Selenium in Treatment of Carcinoma.—Freeman merely relates his experiences with selenium without drawing any conclusions. He does feel justified in making the statement that in a certain group of cases this method of treatment may be useful as a palliative treatment.

Pregnancy Without Demonstrable Cervix.—In Kickham's case repeated careful palpation and inspection failed to show any uterine cervix or anything resembling it, or any cervical opening into the uterus even after labor had begun. The labor progressed in the normal way. Vaginal examination showed the uterine wall about ¼ inch in thickness entirely covering the presenting part, but no suggestion of a uterine opening anywhere. Cesarean section was performed. For fifteen hours following operation no sign of vaginal discharge or staining appeared, and then came a thin, serous fluid which gradually became blood stained; this serosanguineous discharge kept up intermittently until the patient left the hospital. About twenty-four hours after operation the temperature rose to 102.5 F., but examination showed nothing definite to account for it. This temperature subsided in about forty-eight hours, and the patient made a gradual recovery. Up to the fifteenth day the patient had an intermittent evening rise in temperature, which was due partly to a small necrosis at the lower end of the incision, with seropurulent discharge, and to a slight pyelonephritis. This case in Kickham's opinion proves that pregnancy can take place through a very small uterine opening; that nature can take care of the involution of the uterus without the usual large amount of lochia which is discharged externally with a normal cervical canal; it proves the value of early examination in all cases, for in this way abnormalities can be discovered and the condition made known to the family, who cannot thus criticize the attendant later if difficulties arise

Purpura Hemorrhagica with Only Lymphocytes in Blood.—Stansfield reports a case of streptococcic bacteremia, with secondary purpura hemorrhagica, remarkable for the apparent total disappearance of polymorphonuclear leukocytes and platelets from the blood. The only leukocytes present were small lymphocytes. The red cells seemed strictly normal. Blood oozed, for several hours, from the puncture made for examination.

Colorado Medicine, Denver

November, 1922, **19**, No. 11

Pathology and Clinical Medicine. A. G. Ellis, Colorado Springs.—p. 223.
First Care of Eye Accidents by General Practitioner. W. H. Crisp, Denver.—p. 226.
Experiments with Inhalation and Injections of Various Substances into Respiratory Tract. S. Simon, Denver.—p. 230.

Florida Medical Association Journal, St. Augustine and Jacksonville

September, 1922, **9**, No. 3

What Is Psychoanalysis? L. E. Bisch, Asheville, N. C.—p. 43.
Observations on Local Anesthesia. J. E. Boyd, Jacksonville.—p. 45.
Bladder Symptoms in Women. L. J. Efird, Tampa.—p. 51.

Johns Hopkins Hospital Bulletin, Baltimore

November, 1922, **33**, No. 381

*Influence of Treatment of Syphilitic Pregnant Women on Incidence of Congenital Syphilis. J. W. Williams.—p. 383.
*Use of Large Reverdin Grafts in Healing of Chronic Osteomyelitis. M. R. Reid, Cincinnati.—p. 386.
Morphologic Theory of Monochorionic Twins as Illustrated by Series of Supposed Early Twin Embryos of Pig. G. W. Corner.—p. 389.
Development and Growth of Metanephros or Permanent Kidney in Cick Embryos. W. F. Rienhoff, Jr.—p. 392.
*Biometric Studies in Pathology. II. Preliminary Account of Quantitative Method of Evaluating Pathologic Phenomena. R. Pearl.—p. 406.
Vasomotor Reactions. W. M. Bayliss.—p. 412.

Influence of Treatment of Syphilitic Women on Incidence of Congenital Syphilis.—For several years Williams has studied the effect of treatment on pregnant syphilitic women and the life of the child. Ninety-six of these women have passed through 113 pregnancies, and their cases are analyzed. Nine ended in abortion and six in premature labor. In the former, the children were not viable, while in the latter they were either born dead or died during the puerperium. While it cannot be stated that syphilis played no part in the production of any of the fifteen abortions or premature labors, it nevertheless seems permissible to assume that it did not. Of the ninety-eight children remaining, four died from accidents of labor—one premature separation of the placenta, one prolapse of the umbilical cord and two craniotomies. In each instance, necropsy showed no sign of syphilis. On the other hand, four other children were born dead or died during the puerperium and showed signs of congenital syphilis, thus leaving ninety living children which were discharged from the clinic in apparently good condition. Of the eighty-one children which could be traced, seventy-one were found to be living and well, manifested no signs of syphilis, presented a negative Wassermann, and were apparently in excellent condition. Of the remaining nine children, five were living and apparently well, but their mothers would not allow blood to be withdrawn for a Wassermann; while four others had died—three from pneumonia and one from gastro-enteritis. From these figures, it is apparent that of the ninety-four children who were born alive, five, or 5.3 per cent., showed demonstrable evidence of syphilis, while seventy-six were living and well, nine had been lost track of, and four had died. A review of the maternal data shows that almost ideal results follow anything like efficient treatment of syphilitic pregnant women, and that surprising results may sometimes follow what would ordinarily be regarded as altogether inefficient treatment in men or in nonpregnant women, which would seem to indicate that pregnant women are unusually amenable to antisyphilitic treatment. Furthermore, there must be something about the pregnant condition which mitigates the virulence of the disease and predisposes to spontaneous cure.

Use of Large Reverdin Grafts in Healing of Chronic Osteomyelitis.—The method advocated by Reid consists essentially of epithelializing the walls of bone cavities by the use of large Reverdin or pinch grafts. The bone cavity is treated with surgical solution of chlorinated soda until it becomes lined with clean firm granulations. Two hours after the last irrigation with this solution large thick pinch grafts, 0.5 cm. in diameter, are placed closely together on the surface of the cavity. The grafted wound is then exposed to the air for from six to eight hours. The grafts are then covered and held in place with a single layer of gauze which is firmly secured to the normal skin so that the moistening and changing of saline compresses during the next two days will not displace the grafts. After two days the grafts have taken and the use of surgical solution of chlorinated soda instead of salt solution is begun. This is applied by laying wet compresses directly against the wound (the thin layer of protecting gauze having been removed) every two hours during the day and every four hours at night. After about five days the solution is discontinued and the wound is dressed with rubber "protective" or old linen. Invariably, the grafts grow quickly and cover the granulation tissue with epithelium in from ten days to two weeks. Should the granulations become high (usually from the edema of infection), caustics should not be used; surgical solution of chlorinated soda reapplied for one or two days will reduce

the swollen granulations to the level of the grafts, and will not injure the growth of new skin.

Quantitative Method of Evaluating Pathologic Phenomena.—Pearl presents a preliminary account of a pathometric index number, which has for its purpose the obtaining of a single numerical expression of the gravity of the whole pathologic picture disclosed by the lesions discovered at necropsy. The method of calculation is illustrated and the distribution of values of the index for 200 necropsies shown. The purpose of the paper is purely methodologic. Later Pearl hopes to apply the method to the solution of specific problems.

Journal of Immunology, Baltimore

November, 1922, **7**, No. 6

Study of Hemolytic Antibody-Antigen Combination. H. W. Cromwell, Baltimore.—p. 461.
*Studies on Toxicity of Human Blood Plasma for Guinea-Pigs. I. Relative Toxicity of Fetal and Maternal Plasma. S. A. Levinson, Chicago.—p. 497.
II. Coagulation Toxicity. S. A. Levinson, Chicago.—p. 511.

Toxicity of Human Blood Plasma.—Levinson asserts that blood plasma obtained from pregnant women is more toxic for the guinea-pig on intravenous injection than plasma obtained from normal persons. Human placental plasma is practically nontoxic. Similar relations are found with dog plasma obtained from pregnant dogs and from full term fetuses. Plasma obtained during the menstrual cycle (before and after) is occasionally more toxic for guinea-pigs than normal female plasma. The cause of death in the guinea-pig is an intravascular clotting of the capillaries as well (brain, liver, etc.). Death can be prevented if the animal is hirudinized, or if the amount of citrate simultaneously injected, is increased.

Journal of Radiology, Omaha

November, 1922, **3**, No. 11

Inheritability of Spontaneous Cancer in Mice and Its Application to Cancer in Man. M. Slye, Chicago.—p. 453.
Oxycephaly—Steeple or Tower Head; Turmschaedel; Spitzkopf; Turricephaly; Acrocephaly; Hypsicephaly. C. G. Sutherland, Rochester, Minn.—p. 465.
Effect of Heavy Radiation on Pleura and Lungs. A. F. Tyler and J. R. Blackman, Omaha.—p. 469.
Does Radiation Enhance Postoperative Recurrence of Carcinoma of Breast? M. J. Sittenfield, New York.—p. 476.
Practical Dosage of Roentgen Rays. A. Bachem, Chicago.—p. 478.
Ultraviolet Radiation. A. J. Pacini, Chicago.—p. 481.

Kansas Medical Society Journal, Topeka

November, 1922, **23**, No. 11

Ileus. W. E. Mowery, Salina.—p. 319.
Recurring Tonsil. L. B. Spake, Kansas City, Kan.—p. 321.
Glaucoma. W. J. Grove, Eureka.—p. 323.
Stricture of Ureter. R. B. Stewart, Topeka.—p. 327.
Food Sensitization in Infancy. H. L. Dwyer, Kansas City, Mo.—p. 328.

Maine Medical Association Journal, Portland

November, 1922, **13**, No. 4

*Infant Feeding as Seen in Boston Floating Hospital in 1921. C. N. Standhope, Dover.—p. 93.
Medical Reserve Corps. Major Mitchell.—p. 101.

Plea for Floating Hospitals.—Standhope pleads for the establishment by Maine of floating hospitals the same as the Boston Floating Hospital. From out the poorly ventilated, poorly lighted tenements, sweltering in humid air, the sick baby is taken into an ideal environment, to say nothing of the expert care to be found there. Boats destined to be scrapped should be used for this purpose.

Military Surgeon, Washington, D. C.

November, 1922, **51**, No. 5

Plan for Correlation of Three Federal Medical Services in Preparation for War, During Continuance of Hostilities, and Through Subsequent Period of Reconstruction. M. Ashford.—p. 473.
Influences of World War on Development of Civil Practice. E. F. Butler.—p. 494.
Tuberculosis Epidemiology in World War. G. E. Bushnell.—p. 508.
Story of Military Surgeon of Battle of Borodino, 1812. A. Allemann.—p. 522.
Clinical Interpretation of Findings in Blood Chemistry. Z. E. Bolin.—p. 527.
Importance of Correct Diagnosis. J. J. O'Malley.—p. 540.
Penetrating Abdominal Wounds; Five Cases. H. W. Jones.—p. 543.
Delousing American Troops at Bordeaux, France, Prior to Their Embarkation for United States. L. H. Dunn.—p. 546.
Education First Step in Public Health Administration Among Peoples Practically Aboriginals. W. E. Eaton.—p. 560.
Brigade Surgeon with Tropical Expeditionary Force. J. J. Snyder.—p. 567.
Labyrinthine Reactions in Syphilis. W. F. Bonner.—p. 572.

Mental Hygiene, Albany, N. Y.

October, 1922, **6**, No. 4

Body and Mind: Origin of Dualism. F. Mott, London.—p. 673.
Mental Hygiene Needs Arising Subsequent to School Life. C. F. Haviland, New York.—p. 688.
Psychology in Medicine. F. L. Wells, Boston.—p. 700.
Importance of Special Educational Training for Mental Defect Dependent on Organic Lesions. L. P. Clark, New York.—p. 708.
Results and Future Opportunities in Field of Clinics, Social Service and Parole. D. A. Thom, Boston.—p. 714.
Study in Constitutional Psychopathic Inferiority. J. W. Visher, Waukesha, Wis.—p. 729.
Child and Home. Extract from Survey of Mental Health Conditions in Metropolitan District. M. Taylor, Boston.—p. 746.
Child Mental Hygiene in Erie County, New York. A. J. Rosanoff, New York.—p. 773.
Social Service Department and Its Relation to Extensive Parole System. H. A. Steckel, Kings Park, N. Y.—p. 798.
Alcoholic Psychoses Before and After Prohibition. H. M. Pollock, New York.—p. 815.

Philippine Journal of Science, Manila

August, 1922, **21**, No. 2

Amboina Fungi Collected by C. B. Robinson. H. Sydow, Berlin, Ger.—p. 131.
Philippine Mantids, or Praying Insects. F. Werner, Vienna, Aus.—p. 147.
Additions to Herpetological Fauna of Philippine Islands, I. E. H. Taylor, Manila.—p. 161.
Copelandosphaera, New Genus of Volvocaceae. W. R. Shaw, Manila.—p. 207.

September, 1922, **21**, No. 3

*Early Lesions and Development and Incidence of Leprosy in Children of Lepers. L. Gomez, J. A. Bassa and C. Nicolas, Manila.—p. 233.
Additions to Herpetologic Fauna of Philippine Islands. II. E. H. Taylor, Manila.—p. 257.
Correlation of Death Rates from Certain Diseases with Certain Economic and Housing Factors in Philippine Islands. R. Abriol.—p. 305.
Notes on Liopterinae with Descriptions of New Species from Oriental Region (Hymenoptera, Cynipidae). L. H. Weld.—p. 323.

Leprosy in Children in Philippines.—The results of the study of the records in the Culion Leper Colony, and repeated clinical and bacteriologic examinations made during the period between June, 1921, and March, 1922, of all children born up to Dec. 31, 1921, inclusive, and now residing in the colony are given by Gomez et al. In the colony, up to Dec. 31, 1921, there were 290 deaths, or 42 per cent., among children under 1 year of age out of a total of 689 births, excluding stillbirth. This is practically the same percentage of infantile deaths as occurs in a nonleper population. Infantile debility (including malnutrition, athrepsia, and marasmus) holds the first place among the causes of death (34 per cent.); then follow the gastro-intestinal disturbances and infantile convulsions. The children born of leper parents show about the same susceptibility to other morbid conditions as children of nonleper parentage. The mortality on account of congenital debility is higher than in children born in nonleper populations, but this greater mortality due to congenital debility is counterbalanced by the lesser mortality due to infantile beriberi, a disease that has practically disappeared in Culion on account of the exclusive use of unpolished rice as the staple article of diet. The most frequent recognizable site of the early lesion of leprosy is the skin, and the infection through this route is greatly favored, presumably, on account of the great prevalence of skin diseases among the children, which offer anatomic conditions favorable to the invasion of the lepra bacillus. The most frequent recognizable early lesion of leprosy is macular lesion of the skin. The white patches, macula alba, are either precursors of other cutaneous or nervous leprous manifestations, or they themselves develop into definite progressive and bacteriologically positive leprous lesions with concomitant thermal and tactile anesthesia and anhidrosis. Children that have lived in intimate contact with lepers for varying lengths of time may develop leprosy, several months or years after they were isolated from lepers. The shortest period in this series

was four months, and so far the longest period was three years and three months after isolation. The survey made of 308 children of leper parents born and living at the time in Culion Island show twenty-four, or 7.79 per cent., positive lepers and seventy-eight, or 25 per cent., with suspicious or definite signs of leprosy though not bacteriologically positive. The leprosy in children affects both sexes about equally. The incidence of leprosy is in direct ratio to the age of the child: the older the child the greater the incidence. The youngest child found to be a positive leper was 3 years old, but suspicious blemishes have been found in children as young as 1 year of age.

Surgery, Gynecology and Obstetrics, Chicago

November, 1922, **35**, No. 5

*Some Errors in Development of Thyroid. J. N. J. Hartley, Edinburgh, Scotland.—p. 543.
Thyrotoxic Adenoma; Basal Metabolism in Diagnosis of Goiter. W. D. Haggard and F. B. Dunklin, Nashville, Tenn.—p. 553.
*Fractures of Tibial Spine Combined with Fractures of Tuberosities of Tibia. J. W. Sever, Boston.—p. 558.
*Tumors of Testicle; Analysis of One Hundred Original Cases. C. O. Tanner, San Diego.—p. 565.
*Ovarian Transplantation. F. H. Martin, Chicago.—p. 573.
Tripartite Cleft Palate and Double Harelip in "Identical" Twins. A. D. Davis, Omaha.—p. 586.
Pelvic Tumors with Sacral Attachments. A. A. Law, Minneapolis.—p. 593.
Supernumerary Kidney with Ureter Opening into Vagina. A. Samuels, H. Kern and L. Sachs, Baltimore.—p. 599.
Double Scrotum with Gangrene Following Strangulation. K. MacKenzie, Auckland, New Zealand.—p. 603.
Renal and Hepatic Insufficiency in Obstructive Jaundice. W. Walters and D. Parham, Rochester, Minn.—p. 605.
Syphilis of Uterus. J. C. Sosnowski, Charleston, S. C.—p. 610.
*Maternal Deaths Among Ten Thousand Parturient Women at Chicago Lying-In Hospital. J. P. Greenhill, Chicago.—p. 614.
*Report of Five Unusual Cases of Hypertension in Pregnancy. A. C. Williamson, Pittsburgh.—p. 619.
Radium Versus Operative Treatment of Fibroids. N. S. Heaney, Chicago.—p. 625.
Diagnostic and Clinical Aspects of Gonorrheal Salpingitis. H. Schmitz, Chicago.—p. 627.
Short Umbilical Cord. O. H. Rehrlack, Chicago.—p. 632.
Treatment of Undescended Testicle. J. R. Caulk, St. Louis.—p. 637.
Choice of Operations for Duodenal Ulcer. L. Guerry, Columbia, S. C.—p. 642.
Muscle Clamp to Be Used in Thyroidectomies. E. V. Mastin, Rochester, Minn.—p. 644.
New Bone Saw. M. Langworthy, Spokane, Wash.—p. 646.
Method of Locating and Blocking Nerveus Cutaneous Colli. J. B. McNerthney, Tacoma, Wash.—p. 651.
*Benzyl Succinate in Dysmenorrhea. J. J. Mundell, Washington.—p. 652.
Prolonged and Profuse Postoperative Drainage of Pancreatic Cyst and Use of Radium. C. S. Hamilton, Columbus, Ohio.—p. 655.
Harmful Use of Cathartics After Abdominal Operations. L. Long, Oklahoma City, Okla.—p. 658.

Errors in Development of Thyroid.—Hartley cites cases of lingual thyroid, thyroglossal sinus and thyroglossal cyst. A lingual thyroid, he says, in many cases is a true ectopia thyroidis and and then represents the whole of the acting thyroid tissue of the body. This is clinical confirmation of the modern embryologic teaching that the thyroid derives no functionating tissue from the ultimobranchial body. The absence of a palpable isthmus in the pretracheal region is strong evidence of such a lingual swelling being an ectopic and not an accessory thyroid. When a lingual thyroid gives rise to symptoms demanding surgical intervention, a minimal amount of tissue should be removed, and the surgeon should be prepared to adopt thyroid therapy if the clinical symptoms or the basal metabolism rate indicate a state of hypothyroidism. The so-called "infrahyoid" type of thyroglossal cyst not infrequently has an epithelial prolongation upward, either through, behind or in front of the hyoid bone, and, to insure nonrecurrence, it is advisable, when the pedicle can be traced to this bone, to resect the middle portion and to search for a tract leading to the foramen cecum.

Fracture of Tibial Spine.—Eight cases are cited by Sever. They represent a fairly severe type of injury to the knee joint. The cases followed show very good ultimate function. The treatment has been nonoperative; generally long fixation in extension, followed by massage and baking, and passive and active motion. No operation to restore tibial spines or repair torn crucials has been done in this series. Sever believes that the operation should be reserved for those cases in which full and free extension of the knee joint is not obtained combined with pain and disability.

Tumors of Testicle.—The histories of 100 cases obtained from three sources were analyzed by Tanner. It appears that new growth of the testicle occurs about once in 2,000 male hospital admissions. The disease is practically always unilateral—involving both sides only as a metastatic growth from the skin, seminal vesicles, etc. Trauma as an etiologic factor in these tumors evidently has some foundation. Practically all cases occur between the ages of 18 and 50 years, the period of greatest sexual activity. Both testicles are involved with about equal frequency. Undescended testicles within the canal are more apt to become malignant than normally placed organs. Undescended testicles within the abdomen are relatively immune to malignant changes. The average mortality of these tumors taken from the literature is about 80 per cent. based on a four year postoperative period. In this series the mortality was found to be about 70 per cent. The so-called mixed type of tumor gives a much higher mortality than the carcinomatous type. In this series it was 90 per cent. in the former type and 60 per cent. in the latter. Tumors containing cartilage and squamous epithelium seem to have a decidedly unfavorable prognosis. The prognosis in abdominal tumors is also very bad—only 6 per cent. of a large series of patients being alive and well two years after operation. The radical operation should be performed in all cases in which the disease is apparently limited, i. e., in cases showing no abdominal metastases clinically. The ordinary castration operation, even when supplemented by Coley's serum, roentgen ray or radium, does not yield satisfactory results.

Ovarian Transplantation.—A brief abstract is presented by Martin of articles on ovarian transplantation published from 1917 to 1921, inclusive, and an exhaustive bibliography is given. Clinically, Martin says, there is very little to encourage one to believe that transplantation of ovaries as practiced up to the present time has more than speculative value as a surgical procedure. There is some evidence that autotransplants are of some value in deferring the symptoms of the menopause and delaying the cessation of menstruation. It is difficult, however, not to attribute some of this evidence to suggestive therapeutics or to unattached ovarian tissue left in situ. There is practically no convincing evidence that homotransplants have been successful in the human female, nor that heterotransplants have been successful when the human female has been the recipient. The technic followed by the various operators on human females, in too many instances, seems unsurgical and too often is incompletely and loosely recorded, leaving the impression that the conclusions derived from such work must be unreliable.

Death Among Parturient Women.—The gross mortality among the 10,000 cases reviewed by Greenhill was 0.39 per cent. Twenty patients were primiparas and nineteen were multiparas. The cause of death for the thirty-nine patients was: puerperal sepsis, peritonitis and shock, six cases each; eclampsia, five cases; embolism and pneumonia, four cases each; cardiac decompensation and toxemia, three cases each; coronary thrombosis and status lymphaticus with pulmonary edema, one case each.

Hypertension in Pregnancy.—The five cases reported by Williamson all occurred in pregnant women under 30 years of age, with a minimum systolic pressure from 180 to 240 prenatally, and a pressure from 170 to 240 postpartum.

Benzyl Succinate Relieves Dysmenorrhea.—The conclusion reached by Mundell is that benzyl succinate will not cure dysmenorrhea, but that it relieves the pain and cramps equally as well and probably much better than any other drug or method of treatment that has been used.

Tennessee State Medical Association Journal, Nashville

November, 1922, **15**, No. 7

Certain Groups of Atypical Abdominal Symptoms with Relation to Essential Pathology. J. L. McGehee, Memphis.—p. 305.
Some Factors Influencing Etiology of Glycosuria. O. N. Bryan, Nashville.—p. 310.

Peritoneal Drainage. R. A. Barr, Nashville.—p. 314.
Preliminaries of Prostatectomy. W. A. Bryan, Nashville.—p. 318.
Practical Hints in Suprapubic Prostatectomy. G. R. Livermore, Memphis.—p. 321.
Semiradical Mastoid Operation. W. L. Simpson, Memphis.—p. 322.
Symptomatology of Mastoiditis. J. W. Moore, Nashville.—p. 328.

West Virginia Medical Journal, Huntington

November, 1922, **17**, No. 5

Value of Cystoscopy and Radiography Combined in Diagnosis of Diseases of Urinary Tract. O. P. Barker and R. H. Boice, Parkersburg.—p. 161.
Pollakiuria. W. S. Robertson, Charleston.—p. 165.
Some Aids to Diagnosis. C. E. Gabel, Charleston.—p. 172.
Acute Purulent Mastoiditis. T. R. Slayden, Williamson.—p. 177.
Mercuric Chlorid Poisoning from Use of Douche. C. J. Broeman, Cincinnati.—p. 180.

Wisconsin Medical Journal, Milwaukee

November, 1922, **21**, No. 6

*Effect of Antisyphilitic Treatment on Kidney. W. F. Lorenz and W. J. Bleckwenn, Madison.—p. 211.
Value of Transuterine and Transabdominal Gas Inflation of Female Pelvis with Carbon Dioxid. R. S. Cron, Ann Arbor, Mich.—p. 215.
*Traumatic Rupture of Femoral Artery with Hematoma. W. C. F. Witte and H. E. Zilisch, Milwaukee.—p. 218.
Relationship of Genito-Urinary Diseases to Chronic Patient. B. C. Corbus, Chicago.—p. 222.

Effect of Antisyphilitic Treatment on Kidney.—Lorenz and Bleckwenn's clinical experience leads them to believe that many syphilitics suffer from a nephritis which will clear up under antisyphilitic treatment, demonstrating probably the syphilitic origin of that nephritis. Kidney function tests have the apparent advantage of disclosing kidney embarrassment before the usual signs of albumin and casts are demonstrated in the urine. The authors advocate the use of the kidney functional tests, before, during and after drug administration. If it is found that the drug administration increases the renal abnormality it then becomes a matter of selecting the least irritating of the antisyphilitic measures. In a borderline case in which the renal mechanism might easily be injured by the larger doses of a drug generally employed, a careful study of the renal function will disclose the amount of drug that can be tolerated without such injury. Although the actual percentage of cases which develop kidney lesions resulting from antisyphilitic treatment is small, it is still very essential to avoid such disaster. The most important finding by Lorenz and Bleckwenn not observed before is that a kidney function test made immediately after drug administration cannot be accepted as evidence of kidney impairment.

Traumatic Rupture of Femoral Artery.—While riding a motorcycle for the first time, Witte and Zilisch's patient ran into a telephone pole and in falling from the machine hit his abdomen against one of the handle bars. He arose and walked about 10 feet unassisted, using both legs. Within a few hours he was unable to use the left leg at all. The abdomen presented an unusual spherical mass about 10 inches in diameter, located in the left inguinal region, extending up into the lower left quadrant and down over the left leg. This mass was apparently between the skin and muscles of the abdominal wall and was very firm, hard and nonpulsatile. The skin over this tumor was unbroken. The left side of the scrotum was swollen and the genitalia were slightly discolored on the left side. There was a flaccid paralysis of the left thigh and a spastic paralysis below the knee. On the inner side of the thigh there was marked hyperesthesia. Below the knee there was complete anesthesia. All voluntary control of the leg was apparently lost. The roentgen ray showed no fracture of the pelvis or femur. The pathology found at operation consisted of a hematoma below the skin, laceration of all abdominal muscles, exposing the femoral artery which was completely severed, and both proximal and distal ends of the artery contained a blood clot. There was no active hemorrhage. The nerve was evidently not lacerated. There was a laceration of the muscle and tissues between the bladder and the peritoneum. The left leg was paralyzed and there was a beginning gangrene of the foot. Later an atypical amputation was done about 5 inches below the knee joint.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Archives of Radiology and Electrotherapy, London

October, 1922, No. 267

Action of Constant Current with Special Reference to Its Action on Subcutaneous Tissues. W. J. Turrell.—p. 130.
Action of Constant Galvanic Current on Tissues in Health and Disease. Challiol and Laquerriere.—p. 135.
Estimation of Iodin Introduced and Eliminated in Ionization. G. Bourguignon.—p. 139.
Abdominal-Thyroid Galvanization in Treatment of Syndrome of Hyperthyroidism. Menard and Foubert.—p. 143.
Physiologic and Therapeutic Action of High-Frequency Currents. Ronneaux and Laquerriere.—p. 144.
Pyloric Spasm and Painful Abdominal Cases Treated by High-Frequency Thermo-Penetration. M. S. Nemours-Auguste.—p. 153.

British Journal of Surgery, Bristol

October, 1922, **10**, No. 38

Eponyms: VI. Sir James Paget. D. Power.—p. 161.
*Hydrocephalus. J. Fraser and N. M. Dott.—p. 165.
*Clinical Study of Phrenic Shoulder Pain; with Special Bearing on Diagnosis of Acute Abdominal Disease. Z. Cope.—p. 192.
*Solitary Fibromyxoma of Peripheral Nerve Trunks; Case of Cystic Fibromyxoma of Median Nerve. E. A. Linell.—p. 202.
*Congenital Diaphragmatic Hernia. J. B. Hume.—p. 207.
Resuture of Peripheral Nerves. J. B. Stopford.—p. 216.
*Results of Operative Treatment of Internal Derangement of Knee Joint. P. H. Mitchiner.—p. 221.
*Multiple Polypi of Stomach (Gastritis Polyposa): Report of Case. G. P. Mills.—p. 226.
Application of Wedge Principle in Fashioning of Tibial "Bridge" Graft. R. E. Kelly.—p. 232.
Carcinoma of Bone Marrow. Report of Four Cases. A. Piney.—p. 235.
*Some Surgical Aspects of Filarial Disease. F. P. Connor.—p. 253.
Ununited Fractures Due to War Injuries: with End-Results of Operative Treatment in One Hundred Cases. A. P. Mitchell.—p. 259.
*Metastatic Melanoma of Scapula. F. D. Cairns.—p. 290.
Case of Gummatous Pancreatitis with Physical Signs Resembling Acute Cholecystitis. P. H. Mitchiner.—p. 293.
*Case of Calcified Gland of Unusual Size Giving Rise to Dysphagia. C. P. G. Wakeley.—p. 295.
*Unusual Complications in Two Cases of Femoral Hernia. S. L. Ludbrook.—p. 297.
Ulceration of Rectum, with Perforation into Pelvic Cavity, and Prolapse of Four Feet of Ileum per Anum. C. H. Cuff.—p. 299.
Torsion of Gallbladder. C. H. S. Frankau.—p. 301.
Removal of Pin from Third Part of Duodenum. E. E. Hughes.—p. 302.
Pancreatic Fibrosis Obstructing Both Common Bile Duct and Duodenum. Five Years of Active Life After Cholecystduodenostomy and Gastrojejunostomy Before Death from Cancer. W. G. Spencer.—p. 303.
Two Cases of Rupture of Rectum Communicating with Peritoneal Cavity. W. G. Spencer.—p. 304.

Hydrocephalus.—This subject is discussed in all its phases by Fraser and Dott. Also a new classification is suggested. Hydrocephalus is divided into three groups: (1) congenital anomalies; (2) ventricular (obstruction); and (3) extraventricular (obstruction in the subarachnoid space). Group 2 is subdivided further as to site of obstruction: (1) between one lateral and the third ventricle; (2) between both lateral ventricles and the third ventricle; (3) between the third and fourth ventricles and in the roof of the fourth ventricle. The authors emphasize the importance of placing each case in its proper group so that an intelligent treatment may be planned. Efficient treatment must be carried out before the expansion of the head has become too marked. No definite limit can be fixed; but the authors have found that an increase in circumference measurement up to 3 inches above the normal is within the range of satisfactory postoperative recovery. Above this figure the probability of improvement diminishes with every degree of increase. If the hydrocephalus is of the ventricular variety—that is to say, if there is an obstruction at some portion of the ventricular system proximal to and including the roof of the fourth ventricle—the only efficient way of treating the hydrocephalus is by removing the obstruction, and so opening up the normal passage for the circulation of the cerebrospinal fluid. In the extraventricular variety the problem is more difficult. Fraser and Dott have treated all cases of extraventricular hydrocephalus by ligature of the common carotids, and the results have been sufficiently promising to warrant the continuation of this method. Out of thirteen cases of the ventricular type, in three the condition was so advanced as to preclude any prospect of success from operative intervention, five patients

succumbed to the operation; in three cases the operative intervention has resulted in apparent arrest of the disease, but there has been no diminution in the bulk of the head, and the mental condition has remained permanently impaired. In two instances it would appear that a complete cure has been effected. One was a third degree case, the other a fourth degree case. Of the extraventricular type there were six cases; only five were submitted to operative intervention (ligature of carotids), one succumbing on admission to hospital. Of the remaining five cases, one patient succumbed within forty-eight hours of the first operation, as the result of hyperpyrexia, and four were operated on successfully. Of these, three have very definitely improved, and the hydrocephalus appears to have been arrested; in the fourth case no improvement followed the operation, and the hydrocephalus increased to a fatal issue.

Phrenic Shoulder Pain.—Cases are cited by Cope to illustrate that pain of a referred nature is frequently felt on the top of the shoulder as a consequence of stimulation of the sensory terminals of the phrenic nerve in or near the diaphragm. The pain is felt in some part of the segmental areas corresponding to the third and fourth and sometimes even the fifth cervical segments of the spinal cord. This referred pain is met with in many conditions which cause inflammation or irritation of the diaphragm or contiguous structures. There is an important localizing correspondence between the part of the diaphragm irritated and the position of the referred pain on the shoulder. The presence of supraspinous, supra-acromial, or supraclavicular or subclavicular pain is always of great value in diagnosis, as indicating an irritation of the diaphragm or its serous coverings.

Fibromyxoma of Peripheral Nerve.—The only symptom complained of by Linell's patient was that occasionally she had attacks of shooting pain from the site of the tumor down into the middle finger. She suffered no disability whatever, and had noticed no impairment either of muscular power or of sensation in the limb. The tumor was the size of a pigeon's egg, freely movable laterally, but not in the long axis of the limb. The essential connection of the tumor with the median nerve was not considered on account of the complete absence of motor or sensory symptoms. From the proximity of the tumor to the line of the nerve it seemed reasonable to ascribe the shooting pains in the median area to pressure, and a diagnosis was made of a soft fibroma arising from the deep fascia. Exposure of the tumor revealed a dark blue fusiform swelling which appeared to interrupt completely the continuity of the median nerve. The swelling was definitely cystic, and incision allowed the escape of a considerable quantity of dark, fluid blood. After careful consideration and in view of potential malignancy, the median nerve was resected half an inch above and half an inch below the tumor. This was removed, and primary end to end suture of the resected ends of the nerve was performed. Histologic examination showed the cyst to be a fibromyxoma, the typical structure of the majority of innocent false neuromas. Hence, Linell believes, in the absence of more definite evidence of sarcoma, such as infiltration of the nerve above and below the lesion or adherence to surrounding structures, it would have been advisable in this case merely to puncture the cyst and remove as much as possible of its wall without interfering with the continuity of the nerve bundles, thus avoiding the risk of incomplete regeneration after resection and end to end suture.

Congenital Diaphragmatic Hernia.—Hume attempts to define, first, the various types from the standpoint of the pathologic anatomist, and to offer an explanation of their mode of origin; and secondly, to indicate the lines on which surgical treatment may be attempted. A complete report of one case is included, and reports are given of the examination of two other specimens of this condition. Four types are described: (1) hernia through the hiatus pleuroperitonealis; (2) hernia through the dome; (3) hernia through the esophageal orifice; (4) absence of the left half of the diaphragm. Hume has collected thirty-five cases of undoubted congenital diaphragmatic hernia occurring during the years 1910 to 1921. These cases were Type 1, one case; Type 2, eighteen cases; Type 3, twelve cases; Type 4, four cases. Surgical treatment is palliative only. Thoracotomy is the route of election.

Results of Operation for Internal Derangement of Knee Joint.—A reexamination of about eighty-five cases has convinced Mitchiner that as regards the actual route selected at operation, the transpatellar is the most satisfactory in all respects. No method of splinting is necessary or advisable to secure fixation of the knee after operation; early movement, combined with electrotherapeutic measures, is beneficial in promoting early absorption of effusions. The full benefit of the operation is not to be expected for from two and a half to three years after its performance. Those cases in which a definite lesion of the intra-articular structure is present give far more satisfactory results (76.6 per cent. in cases of damage to the semilunar cartilage, and 60.9 per cent. in those of loose body) after operation than when no definite lesions can be found (37.7 per cent. with synovial fringes, and only 27.7 per cent. in which no lesion is seen at operation). When nothing abnormal is found on the joint being opened, the best course to adopt is to close the joint without interfering with the intra-articular structures. Reviewing the whole of the facts set forth by Mitchiner, it would seem that operative intervention in cases of internal derangement of the knee is justifiable, if not desirable, in all cases in which a diagnosis of a definite lesion of any of the intra-articular structures can be hazarded with any degree of certainty, and where the consequent disability is sufficient to prevent the patients carrying out efficiently their daily avocation.

Multiple Polyps of Stomach.—Mills adds one case to the nineteen cases recorded in the literature by others, and suggests that these growths should be described as papillomas rather than as adenomas. He is convinced that they will eventually prove to be something in the nature of infective "warts" on the mucous membrane of the stomach.

Calcified Guinea Worms.—Connor cites a number of conditions which were simulated by the remains of calcified guinea worms in the tissues.

Metastatic Melanoma of Scapula.—The most striking feature of the case cited by Cairns is the long interval between the original incidence of the primary tumor and the subsequent metastasis. Eighteen years previously the patient, a man, aged 59, had an eye removed because it was the seat of a melanoma. No recurrence was noted for seventeen years and then there was also a metastasis to the scapula. Both macroscopically and microscopically the tumor displayed the characteristics of a melanotic sarcoma which clinically and pathologically was secondary to the recurrence in the eye.

Calcified Mesenteric Gland Causes Dysphagia.—In Wakeley's case a hard solid tumor was felt to the left side of the epigastrium. It was about the size of an orange, and could easily be moved about the abdomen. It could not be felt on examination per rectum. The patient complained only of difficulty in swallowing solid foods. On opening the abdomen through a left rectus incision, a large calcareous mass in the mesentery was delivered. The gland, which was almost calcified throughout, measured 3 inches across. The case is of interest because of the unusual size of the calcified gland, and its pressure effect on the stomach.

Inflamed Appendix and Meckel's Diverticulum in Hernia Sac.—One of Ludbrook's cases was an instance of an acutely inflamed appendix in the sac of a femoral hernia. The second case was one of right femoral hernia complicated by a Meckel's diverticulum adherent to the hernial sac.

Indian Journal of Medical Research, Calcutta

October, 1922, **10**, No. 2

Distribution and Control of Hookworm Disease in India. Prepared by International Health Board, Rockefeller Foundation, New York. —p. 295.

*Correlation Between Chemical Composition of Anthelmintics and Their Therapeutic Values in Connection with Hookworm Inquiry in Madras Presidency. J. F. Caius and K. S. Mhaskar.—p. 343.

Bacteriologic and Laboratory Technic. Section VII. W. F. Harvey. —p. 361.

*Advantages of Single and Fractional Dosage in Prophylactic Inoculation. W. F. Harvey and K. R. K. Iyengar.—p. 424.

Synopsis of Adult Oriental Culicine (Including Megarhinine and Sabethine) Mosquitoes. Part II. F. W. Edwards.—p. 430.

Reversion of Flagellate Form of Leishmania Donovani and Leishmania Tropica to Resistant Nonflagellate Torpedo and Body, in Culture Tubes and Its Bearing on Attempts at Search for Transmitter. R. Row.—p. 476.
General Bullinus and Physa in Mediterranean Basin (Mollusca Pulmonata). N. Annandale.—p. 482.
*Chemotherapy of Antimonial Compounds in Kala-Azar Infection. U. N. Brahmachari.—p. 492.
*New Flagellate Parasite in Human Intestinal Canal. G. C. Chatterjee. —p. 523.
Larva of Anopheles Annandalei, Prashad. M. O. T. Iyengar.—p. 526.
Development and Structure of Terminal Abdominal Segments and Hypopygium of Mosquito, with Observations on Homologies of Terminal Segments of Larva. S. R. Christophers.—p. 530.
Hypoderma Crossii Sp. Nov., Parasitic in Its Larval Stages in Cattle and Goats in Punjab. W. S. Patton and E. M. Patton.—p. 573.
Survey of Biting Insects of Assam with Reference to Kala-Azar for Whole Year from November, 1921, to October, 1922. P. R. Awati. —p. 579.
Possible Fallacy in "Thick-Film" Method of Examination for Malarial Parasites. J. A. Sinton.—p. 592.

Chemical Composition of Anthelmintics and Therapeutic Values.—Caius and Mhaskar have found that propenyl phenols have well marked anthelmintic properties. The anthelmintic power is not associated with the unsaturated side chain, but with the phenol group. Substances containing a free phenolic hydroxyl act both as vermicides and vermifuges, and much in the same way as thymol or betanaphthol. Esterification results in the formation of compounds with little or no anthelmintic value. Etherification weakens or even destroys the vermifugal power, and, in some cases, modified the vermicidal action. The vermicidal action of methyl ethers resembles that of thymol or betanaphthol. The vermicidal action of methylene ethers resembles that of chenopodium oil.

Single and Fractional Doses in Prophylactic Inoculation.—According to Harvey and Iyengar, two spaced doses of intravenous prophylactic antigen in pigeons afford better protection than a single dose and three doses better than two. The production of agglutinins, like the protection afforded, was greater with divided inoculation than with single inoculation of the same total quantity.

Toxicity of Antimonial Compounds.—The toxicity of some of the antimonyl tartrates and of some new aromatic antimonials is described by Brahmachari. After the administration of a toxic dose of an antimonyl tartrate, the pathologic changes are most markedly seen in the lungs, the kidneys, the liver, pituitary and suprarenals. These consists chiefly of hemorrhages into the substance of these organs and destruction of their cellular elements. Similar pathologic changes are also observed after toxic doses of the aromatic antimonial compounds. Ammonium antimonyl tartrate is the least toxic of all the antimonyl tartrates used. The toxicity of the antimony content of an antimonyl tartrate is least marked in the case of the ammonium salt. The presence of nitrogen in the basic radicle of an antimonyl tartrate diminishes the toxicity of some of them. Ammonium antimonyl tartrate is of marked therapeutic value in the treatment of kala-azar. The low toxicity of ammonium antimonyl tartrate and its high antimony content lead to the conclusion that of all the antimonyl tartrates dealt with in the present paper, ammonium antimonyl tartrate is the best for use in the treatment of kala-azar. A series of new organic aromatic antimonials have been discovered, the preparations of which are described. The toxicity of the following aromatic antimonials has been estimated: (1) phenyl stibinic acid; (2) acetyl-*p*-amino-phenyl stibinic acid; (3) stibamine; (4) urea stibamine; (5) stib-hectine. The acetyl derivative of *p*-aminophenyl stibinic acid is less toxic than stibamine. Urea stibamine is less toxic than stibamine. Urea stibamine has been found useful in the treatment of kala-azar. Urea stibamine is a much safer antimonial for use in the treatment of kala-azar than tartar emetic or other antimonyl tartrates. Symptoms, such as vomiting and purging, are much less marked after intravenous injection of an effective dose (=0.25 gm.) of urea stibamine than that of tartar emetic or sodium antimonyl tartrate (=0.12 gm.).

New Flagellate Intestinal Parasite.—In examining the blood and mucus containing stool of a child suffering from an acute attack of dysentery, Chatterjee found numerous actively motile, oval shaped flagellates. These, when stained by iron hemotoxylin stain, showed characters unlike those found in flagellates hitherto described. The organism stands unique in this respect that no organism has been found in man up to now which shows eight free flagella.

Journal of State Medicine, London

November, 1922, **30**, No. 11

War Wastage from Minor Ailments. A. B. Soltau.—p. 461.
Vitamins in Connection with Infant Feeding. E. A. Barton.—p. 470.
Building of Good Teeth and Their Preservation. H. Scurfield.—p. 480.
Physiologic Prevention of Dental Caries and Oral Sepsis. J. Wheatley. —p. 484.
Beginnings of Disease Stopped by Building and Preservation of Good Teeth. S. Barwise.—p. 486.
Some Causes of Irregular Teeth and Their Effects. A. E. Barnett. —p. 489.

Medical Journal of Australia, Sydney

Oct. 21, 1922, **2**, No. 17

Psychology: Its Basis and Application. J. W. Springthorpe.—p. 461.
Physical Basis of Insanity. W. A. T. Lind.—p. 465.
Therapeutic Value of Arsenobenzol Drugs. H. Rischbieth.—p. 472.

Medical Journal of South Africa, Johannesburg

Oct. 28, 1922, **2**, No. 3

Public Ill Health. J. A. Mitchell.—p. 59.
Auricular Fibrillation: Paroxysmal Type. L. I. Braun.—p. 63.
Then and Now. C. Porter.—p. 69.

Quarterly Journal of Medicine, Oxford

October, 1922, No. 61

*Contracted Kidney. S. C. Dyke.—p. 1.
*Respiratory Exchange in Cretinism and Mongolian Idiocy. G. B. Fleming.—p. 11.
*Relapsing Pyrexia in Lymphadenoma: Report of Case. A. J. Hall and J. S. C. Douglas.—p. 22.
*Arteriosclerosis in Children. G. Evans.—p. 33.
*Calcium and Phosphorus Metabolism. Part I. Excretion. S. V. Telfer.—p. 45.
*Id. Part II. In Rickets. S. V. Telfer.—p. 63.

Contracted Kidney.—Eight cases of nephritis associated with contracted kidney are considered by Dyke and one in which the kidneys were not contracted. One of the contracted kidneys showed changes associated with senile arteriosclerosis without evidence of inflammation; in this case biochemical tests performed during life showed no evidence of departure from normal. The remaining seven contracted kidneys all showed a combination of an inflammatory process with intimal hyperplasia and fatty change in the arterioles of the type associated with "diffuse hyperplastic sclerosis." The biochemical tests in these cases showed a progressive debasement of renal function. The one case of uncontracted kidney showed inflammatory changes without intimal hyperplasia of the arterioles. On neither histologic nor biochemical grounds was it possible to divide the seven kidneys into primary cardiovascular or secondary inflammatory types. It is suggested that both the inflammatory and the vascular changes of the type described as "diffuse hyperplastic sclerosis" are the common results of the action of one toxic agent. It is further suggested that the only true primary cardiovascular contracted kidney is that of the senile arteriosclerotic type.

Basal Metabolism in Cretinism and Mongolian Idiocy.—The basal metabolism was found by Fleming to be unduly low in the untreated cretin. Thyroid treatment raised the metabolism to about the normal level. The basal metabolism was normal in six Mongols. Thyroid treatment had no effect on their basal metabolism. Fever caused a rise in the metabolism. The results of these respiratory exchange experiments in cretins and Mongols are used by Fleming to test the suggestion that the basal metabolism rate referred to body weight gives a reliable index of nutrition.

Relapsing Pyrexia in Lymphadenoma.—In certain cases of lymphadenoma there is a type of relapsing pyrexia which differs in certain respects from that seen in any other disease. It resembles the pyrexia seen in that group of recurring fevers which includes malaria, relapsing fever, rat bite fever, and some others, in (*a*) regular periodicity; (*b*) gradual ascent by steppage and sometimes similar gradual descent

and (*c*) very low temperatures with apparently complete recovery in the apyrexial periods. It differs from them in the greater length of span, which is usually from fifteen to twenty-five days, but may extend even to thirty-six days. It is usually fairly constant for each individual case. Hall and Douglas report one case.

Arteriosclerosis in Children.—Four cases form the basis of Evans' paper. Three cases belong to the type of chronic nephritis in childhood commonly named renal infantilism. The fourth case is different in some respects both clinically and pathologically, but in the similarity of the renal and cardiovascular affection it is sufficient for the present purpose to place it in the same group with the other three. The outstanding feature of these cases was the marked degree of cardiac hypertrophy and abnormally raised blood pressure (from 165 to 260 mm.). All the patients died. Histologic examination of the kidneys showed that diffuse hyperplastic sclerosis is identical in children and adults. Its association with chronic nephritis in children is more significant than in adults, because many of the causes of arteriosclerosis are excluded in children by reason of their age.

Calcium and Phosphorus Excretion.—The excretion of calcium, phosphorus, and fatty derivatives Telfer asserts are interdependent, calcium being eliminated chiefly as phosphate and to a lesser extent as insoluble soaps, the relative amounts of these varying with the conditions of the intestinal contents. The total amount of calcium and phosphorus eliminated is nearly proportional to the intake. In normal infants 40 per cent. of the total phosphorus excreted appeared in the urine, 60 per cent. in the feces. With acid formation in the intestine, less phosphorus is excreted by the feces, more by the urine. The influence of calcium soaps in controlling the bulk of feces is discussed. No evidence of absorption of calcium in excess of requirements with subsequent reexcretion into the bowel was obtained. On the other hand, all the observations made seemed to indicate that the greater part of the calcium in the intake is restricted to the intestine; and, except the small amount excreted in the urine, the amount absorbed is nearly equivalent to the amount retained. The excretion of calcium and phosphorus in relation to fats is discussed in certain pathologic cases in which an excessive soap formation was a feature common to all. It is suggested that in these the common causative factor was a persistence of free fatty acids in the intestine, possibly secondary to some degree of hepatic insufficiency.

Calcium Metabolism in Rickets.—The causes which might give rise to diminished retentions of the bone forming elements are discussed by Telfer. It is argued that defective absorption of calcium from the intestine, possibly the result of some alteration in the gastro-intestinal functions, cannot yet be excluded as a factor in the causation of bone 'softening' in rickets.

Annales de Médecine, Paris

October, 1922, **12**, No. 4

*Diffusibility as Factor in Pathology. A. Chauffard et al.—p. 257.
*Benzoin Test in Neurosyphilis. P. Marie et al.—p. 263.
*Tetrachlorethane Poisoning. N. Fiessinger and M. Wolf.—p. 269.
*Mumps Septicemia. F. Moutier.—p. 296.
Research on Antibodies in Tuberculosis. P. Armand-Delille et al.—p. 313.
*Actinomycosis of Spinal Cord. Lesné and Belloir.—p. 329.

Diffusibility of Urea, Sodium Chlorid, Uric Acid and Glucose.—Chauffard, Brodin and Grigaut found that the comparative liquid diffusion through a parchment membrane might be represented by 59 for glucose, 74 for sodium urate, 92 for sodium chlorid and 93 for urea. The comparative speed of the dialysis and the difference in the diffusibility explain certain physiologic phenomena, such as the fact that urea and sodium chlorid are found in the cerebrospinal fluid in about the same concentration as in the blood, while only 59 per cent. of the glucose in the blood can be found in the cerebrospinal fluid. This seems to indicate that this fluid is formed by dialysis, rather than by actual secretion. Uric acid, on the other hand, behaves quite differently. The living membrane involved seems to display a selective action against the passage of uric acid. Dialytic diffusion probably plays an important rôle in impregnation of the tissues, as with sugar in diabetics and uric acid in the gouty.

Benzoin Test in Neurosyphilis.—Marie, Bouttier and Iorgoulesco have been applying in 105 cases of various nervous affections the colloidal benzoin test introduced by Guillain and his co-workers. The flaking was distinct and durable when the spinal fluid had been derived from a case of neurosyphilis, general paresis or tabes (with the exception of 3 in the 5 cases of tabes), while the response was constantly negative in the 4 cases of brain tumor, 12 of epidemic encephalitis, 6 of epilepsy and 56 of neuralgia, headache, etc., in nonsyphilitics. They extol the simplicity and reliability of the method.

Industrial Tetrachlorethane Poisoning.—Fiessinger and Wolf remark that arsphenamin jaundice is so frequent nowadays that not a week passes in an active hospital practice without encountering it. They have recently been studying two cases of toxic jaundice, one fatal, for which tetrachlorethane, in the manufacture of artificial pearls, was manifestly responsible. In these and other cases cited, the first symptoms were fatigue, nausea, headache, constipation, sometimes vomiting. The jaundice did not appear till the third or fourth day. The necropsy findings in their case are compared with the result of experiments on white mice. They all testify to the highly toxic nature of tetrachlorethane, and that the liver suffers first and foremost. Since 1915, toxic jaundice has been on the list of diseases to be declared to the British factory inspection service. In France this chemical has been abandoned in the making of aeroplanes. Treatment of the toxic manifestations is said to consist in the early and prolonged use of liver organotherapy, with abundance of sweetened beverages. Wilcox has emphasized the importance of alkaline treatment, giving about 2 gm. each of sodium citrate and sodium carbonate in a little water every two or three hours. This was supplemented with small glucose or sodium bicarbonate enemas. This alkaline treatment cured even in a case of trinitrotoluene toxic jaundice.

Mumps Septicemia.—Moutier declares that the 600 cases of mumps he had in his charge during 1918 have convinced him that mumps is a septicemia with multiple localizations in the viscera. The general infection was accompanied with symptoms showing involvement of the testicles, pancreas, or suprarenals, meninges or brain, and sometimes of the pituitary or thyroid. Nine of the 600 men had a second attack of mumps two or three months later. In 11 cases there was recurrence after a brief interval. In 74 cases there was pancreatitis, quite severe in 25. The blood pressure varied in a baffling way. This long study of mumps concludes with the assertion that the entire history of the disease is that of an infection of the ductless glands. "It is the typical disease of the endocrine organs."

Actinomycosis.—Lesné and Belloir accepted by exclusion actinomycosis as responsible for the peculiar multiple abscesses, and this diagnosis was confirmed by the course of the case. There was nothing to suggest actinomycosis in the history of the case. The man of 44 lived in Paris. The diagnosis had been pulmonary tuberculosis at first, and the course seemed mild, but metastasis in the spinal cord soon proved fatal. Iodid treatment does not seem to have any influence on mycosis involving the central nervous system.

Archives des Maladies du Cœur, Paris

October, 1922, **15**, No. 10

*Aneurysm of the Aorta of Tuberculous Origin. E. Lenoble.—p. 677.
*Infectious Myocarditis and Cardiac Insufficiency. R. Lautier.—p. 686.

Aneurysm of the Aorta of Tuberculous Origin.—Lenoble reports a case of aneurysm of the aorta in a man of 43 in whom the tubercle bacillus was found in the sputum only after minute research. The case was diagnosed as a healed tuberculous aneurysm from a tuberculous lesion, relic of a histologic bacillary infection arrested in its evolution. It is an example of Gilbert's *tuberculose déshabitée*, "vacated by the tubercle bacilli."

Infectious Myocarditis and Cardiac Insufficiency.—Lautier states that the clinical type of cardiac insufficiency to which he desires to call attention is characterized by the following points: A rather sudden onset—in a healthy subject of any age, having had or not, consciously or unconsciously, a

previous heart attack—of signs of cardiac insufficiency, occurring without having overworked the myocardium, and which may reach the complete asystolic syndrome, presenting a special evolution, often entailing death after periods of alternating improvement and aggravation, sometimes even real remissions, and peculiarly uninfluenced by heart tonics. The signs which reveal this grave type of cardiac insufficiency, are more or less marked anemia, leukocytosis of variable intensity, and rise in temperature. Auscultation reveals a peculiar vibration of the whole heart at each beat, and the rhythm may be irregular. From this symptomatic triad: anemia, leukocytosis and fever, we can conclude that an infection is responsible for this passive cardiac insufficiency. The involvement of the heart in infectious disease, especially rheumatism, when limited to the endocardium or pericardium, entails only a minimum of subjective signs and insignificant disturbance of the circulatory balance. On the contrary, when the infection affects the myocardium only, or both myocardium and pericardium, great circulatory disturbances immediately occur on account of the decrease of functional capacity of the heart muscle. With the total arrhythmia, auricular tachysystole and tachy-arrhythmia, quinin or quinidin should not be given as one may be tempted to do to combat the fever and arrhythmia. In such cases these drugs are harmful for the heart and often fatal. If the physician should be tempted to institute an antisyphilitic treatment to combat a possible specific infection, great caution is necessary in the use of arsphenamin and even of mercuric cyanid; they may be disastrous in this form of cardiac insufficiency. By following the signs described here, physicians will be able to ferret out these cases of asystolia rebellious to ordinary treatment, and early diagnosis is important to enable prompt and adequate treatment.

Archives de Médecine des Enfants, Paris

November, 1922, **25**, No. 11

*Nephritis in Inherited Syphilis. V. Hutinel.—p. 641. Conc'n.
*Diphtheria Epidemics. J. Camescasse.—p. 671. Conc'n.
*Pink Disease: Acrodynia. J. Comby.—p. 680.

Nephritis in Inherited Syphilis.—The preceding instalment of Hutinel's article was summarized on page 1960. He emphasizes that nephritis from inherited syphilis may not differ from ordinary nephritis from common infections. In fact, the nephritis is actually the work of the common infection; the syphilis is merely a predisposing cause, but it may magnify the damage from the ordinary infection. This leaves the kidney doubly sensitized. Treatment of nephritis in syphilitic children should be the same as for any nephritis, and treatment of the syphilis should not be neglected. It is difficult, however, as the main emunctories are not working properly. The drugs selected should be those the kidneys stand best, tentatively testing the tolerance. He has had cases in which hematuria or a tendency to anuria followed simple mercury rubs. He prefers arsphenamin, in small doses far apart. Iodid can be given also, but children do not bear too much of it. Treatment has to be so cautious that not much hope can be based on it. Encouraging improvement may be observed, but in subacute or chronic cases, a cure cannot be promised.

Some Epidemics of Diphtheria.—Camescasse remarks in the course of this study of the management of school epidemics of diphtheria, "Hygiene is the diplomacy of medicine." He quotes that the only laws which can be enforced are those which codify already established customs. Those for which public opinion is not prepared are usually totally ineffectual.

Acrodynia or Epidemic Erythema.—Comby has been able to compile quite a number of reports of cases of the disease not yet described in the textbooks, but called variously "raw beef hands and feet," "pink disease," erythredema and pellagra-acrodynia. In 88 cases compiled in Australia, the children affected were from 4 months to 3½ years old. The disease terminated fatally in 5 of 91 cases, and in some of the 25 American cases he cites. In Parkes Weber's recent case, the clinical picture was an actual dermatopolyneuritis in the boy of 2½, a chronic mutilating acrodermatitis of hands and feet.

Bulletin de l'Académie de Médecine, Paris

Oct. 24, 1922, **88**, No. 34

*Insanity in Egypt. A. Marie.—p. 154.
*Alkaline Treatment of Gastric Ulcer. Le Noir.—p. 157.
*Endocarditis with Effusion Elsewhere. E. de Massary.—p. 160.

Insanity in Egypt.—Marie's analysis of the data for thirty years in respect to the care of the insane in Egypt, shows that the Arabs are subject to all the mental diseases known to Europe, and that general paresis was encountered in 0.55 per thousand population, a total of 1,000 cases during the thirty years to a population of 12,664,009. Neurosyphilis is common, and cases of precocious general paresis from inherited syphilis have been seen, and also pluriconjugal neurosyphilis from polygamy. Pellagra and hashish are also responsible for a large proportion of the insanity, more than compensating for the rarity of alcoholism as a factor in insanity.

Sodium Bicarbonate in Treatment of Gastric and Duodenal Ulcer.—Le Noir expatiates on the multiple actions of sodium bicarbonate in cases of ulcer, and the absence of by-effects when the drug is given by rectal drip, 500 gm. of a 15 per thousand solution instilled by proctoclysis, instead of being taken by the mouth. The drug thus reaches the liver without being modified beforehand by the gastric juice. It passes directly into the blood, and thus combats insufficiency of the liver and acidosis, besides its sedative action on the ulcer. This latter he found in some cases fully as pronounced as when the drug was given by the mouth.

Endocarditis with Vegetations and Effusion Elsewhere.—De Massary reports three cases in which the endocarditis was completely masked by an effusion in the peritoneum, pleura or meninges, the disease thus sailing under the false flag of peritonitis, pleurisy or meningitis. In the first case, the retrospective diagnosis from the necropsy findings was that an acute attack of endocarditis with vegetations had developed on an old mitral valvular affection; an infarct in the spleen had followed, and then subacute peritonitis proved fatal. The peritonitis had deceptively dominated the clinical picture; as likewise the pleurisy in the second case and the meningitis in the third. The endocarditis was not recognized during life.

Bulletin Médical, Paris

Oct. 21, 1922, **36**, No. 43

*Diffuse Scleroderma After Vaccination. J. Nicolas and J. Gaté.—p. 843.
Sodium Salicylate in Treatment of Acute Articular Rheumatism. R. Lutembacher.—p. 844.

Diffuse Scleroderma After Vaccination Against Typhoid.—Nicolas and Gaté report a case of diffuse scleroderma in a man of 44 without morbid antecedents. It developed in an acute form three weeks after the course of antityphoid vaccination. No similar case was found in the literature for the last twenty years. It seems, in this case, that the vaccination must be incriminated for the affection, three weeks after the last injection. Two years before, an A and B antiparatyphoid vaccination had entailed disturbances, which tends to show the peculiar susceptibility of the patient. On the other hand, it is now generally admitted that typhoid fever can usually be found in the remote or recent antecedents of certain patients with scleroderma. They query whether the typhoid antiserum acted like a typhoid fever in this case, or if it constituted, on the contrary, merely a disturbing intoxication in a predisposed subject. One single case, however, does not allow any conclusive answer to these questions.

Oct. 28, 1922, **36**, No. 44

The Physiology, Etiology and General Treatment of Hemorrhages. P. Emile-Weil.—p. 861.
Treatment of Visceral Hemorrhages. G. Boyé.—p. 866.
*Constitutional Tendency to Hemorrhagic Conditions. P. Chevallier.—p. 869.

Nov. 4, 1922, **36**, No. 45

Chronic Hypertrophy of the Lymphoid Tissue of the Pharynx. H. Stévenin.—p. 887.

Constitutional Hemorrhagic Tendencies.—Chevallier states that it is not always easy to proclaim the constitutional character of a hemorrhagic syndrome. Blood analysis is useless. Infections, intoxications and dyscrasias can realize

all sorts of blood and blood vessel disturbances. The hemophilia type of hemorrhage is rare, but the purpura and cholemia types are frequent. Troubles of coagulation are often of complex origin. In certain acute postarsphenamin purpura cases, the incoagulability of the blood, complete at first, may decrease and disappear while the purpura remains. In acute diseases, the hemorrhagic tendency may upset the diagnosis, even of a disease as easily diagnosed as smallpox, or it may intensify an intoxication, as from benzene. Sometimes the hemorrhagic tendency is of slow evolution, as in leukemia, pernicious anemia and infectious endocarditis, and their difficult diagnosis may require careful clinical analysis and all the resources of the laboratory.

Bulletins de la Société Médicale des Hôpitaux, Paris

Oct. 20, 1922, **46**, No. 28

*Heterotherapy. G. Milian.—p. 1339.
*The Soil in Eczema. M. Pinard.—p. 1340.
Venous Murmurs with Cirrhosis. A. Florand.—p. 1342.
*Calcium Chlorid in Night Sweats. A. Pellé.—p. 1346.
*Paradoxes of Pleural Adhesion. P. Ameuille.—p. 1349.
*Meninges Permeability Index. R. Targowla and E. Peyre.—p. 1353.
Treatment of Nodular Leprosy. J. Hasson.—p. 1356.
Case of Syphilis Refractory to Bismuth. L. Lortat-Jacob and J. Roberti.—p. 1361.
Case of Acanthosis Nigricans. Caussade et al.—p. 1363.
*Meningitis of Helminth Origin. R. Lancelin.—p. 1369.
Epidemic of Malta Fever. Dargein and Plazy.—p. 1373.

Heterotherapy.—Milian has coined this term to express the treatment of one affection by the specific for a second, casually coincident disease. This is the explanation of the cases in which mercury or arsenicals cured psoriasis, eczema, typhoid fever or other affection. Such cases have been reported as instances of "desensitization" or the like, when the mystery is merely that the patient happened to be syphilitic.

Treatment of Eczema.—Pinard asserts that eczema must be regarded as a reaction to the elimination through the skin of toxic substances. The skin is already suffering, usually from the action of some constitutional taint, tuberculosis, or inherited syphilis, and some accidental intoxication proves the last straw. Treatment of eczema, consequently, must be entirely different from the usual routine. The skin should be protected against irritants, especially water. Cleansing should be done with petrolatum and oil of sweet almonds, and the skin protected with pastes that allow respiration of the skin. The main efforts in treatment should be addressed to the underlying constitutional disease, to modify the soil and increase the resisting powers.

Calcium Chlorid in Treatment of Night Sweats.—Pellé declares that calcium chlorid by the vein is the heroic remedy for exhausting sweats. The most profuse and inveterate night sweats always subsided, in his experience, after 2 or 3 intravenous injections of 2 c.c. of a 50 per cent. solution of calcium chlorid. In 18 mild cases of tuberculous night sweats, a single injection banished the sweats for three or four months. In 12 more serious cases, 2 injections were required in 5, and in one case a third injection to complete the cure. In 6 cases of inveterate and extremely exhausting night sweats, 2 or 3 injections answered the purpose in 4, but 2 others required a second course, three or four weeks after the first. A sensation of heat is a constant reaction, but is harmless. An eschar is liable to form if the fluid is injected around, instead of strictly within the vein.

Adhesion of the Layers of the Pleura.—Ameuille remarks that it is practically impossible to say whether the layers of the pleura are adherent or not. The only way to be certain is to try to inject air. This is simple and harmless, and seems to be the only way to tell whether pneumothorax is practicable.

Index of the Permeability of the Meninges.—The weakest dilution of the spinal fluid allowing the hemolytic reaction, divided by the same for the blood serum, gives a quotient which Dujardin calls the index of permeability of the meninges. Targowla tabulates the serial findings with this index, parallel with the colloidal benzoin test, in twenty-five cases of syphilis. The benzoin test was found much simpler and more instructive.

Meningitis Traceable to Helminths.—The clinical picture in the young man suggested tuberculous meningitis for three weeks. Then the casual discovery of an ascarid, and santonin treatment, were followed by prompt and complete recovery.

Journal d'Urologie, Paris

September, 1922, **14**, No. 3

*Diversion of Urine in Penitis. L. Thévenot and de Rougemont.—p. 177.
Pyelonephritis. Treatment with Silver Salts. H. Kummer.—p. 187.
*Healing After Prostatectomy. R. Bonneau.—p. 223.
*Diffuse Papillomatosis of Ureter. G. Marion.—p. 227.

Diversion of Urine with Rebellious Suppuration in Penis.—A case is described which testifies to the advantage of diverting the urine to allow the abscess in the corpus cavernosus or gland to have a chance to heal, when once thoroughly drained. In five other cases cited, the reliance was on a plastic operation or retention catheter, but this exposes to mishaps. In these cases the abscess had followed a gonorrheal stricture, but in the first mentioned case the sound urethra was damaged in extracting an impacted calculus, and the recurring suppuration through two years had entailed finally seven rebellious fistulas in the penis. They were curetted and the urine was diverted through the perineum, and by the thirty-fifth day the penis had healed completely. The perineal fistula was excised a few months later, after the cure of the pyuria.

Healing After Prostatectomy.—Bonneau refers to the fistula after the suprapubic incision when the tissues of the bladder and abdominal wall have been weakened by the preliminary cystostomy, weeks or months before the prostate was actually removed. The preliminary cystostomy should not be near the neck or pubis, as conditions here are less favorable for healing. It is futile to try to draw the tissues together under a tight dressing. The tissues tend to macerate, and there is no healing. Better open up the fistula, curet, disinfect with stick silver nitrate, and drain with nitrate wicks. He likes to keep the suprapubic incision open until certain that the bed of the prostate is healing nicely.

Diffuse Papillomatosis of the Ureter.—The entire ureter was removed as it was lined throughout with confluent papillomas. All were about the same size, and not a scrap of sound ureter wall could be discovered between them. The patient was a man of 45 who had had the kidney on that side removed in 1917 on account of recurring hematuria. Multiple polyps were found in the kidney pelvis, and some were seen in the ureter. Recurring polyps in the bladder were cauterized later, and the ureter was resected, hoping thus to remove the perennial source of polyp production.

Presse Médicale, Paris

Oct. 28, 1922, **30**, No. 86

*Intraspinal General Anesthesia. T. Jonnesco.—p. 929.
The Benzoin Reaction in General Paresis. R. Targowla.—p. 931.
Focal Dental Infection in General Medicine. F. Nidergang.—p. 933.
*Sugar to Ward Off By-Effects of Arsphenamin. L. Cheinisse.—p. 933.

High Intraspinal Anesthesia.—Jonnesco expatiates on the advantages of injecting the anesthetic in the vicinity of the nerve centers, instead of giving it by inhalation, which forces it to traverse almost the entire organism before reaching the nerve centers, giving it a chance to exert its toxic action on the way. He deplores the general distrust of this method of high intraspinal injection, from fear of paralyzing the centers in the medulla. He says he never had any serious mishaps with it in fourteen years and 5,016 applications, including 1,136 high and 3,880 low intraspinal injections. It has been used likewise by other Roumanian surgeons to a total of 11,324 cases, with two fatalities. By mixing caffein (50 cg.) with the stovain (2 to 5 or 10 cg.), the caffein stimulates the bulbar centers and thus corrects any tendency to a depressing action. It is thus almost a local anesthesia, and it has the special advantages of leaving the throat reflexes intact, while the abdomen is absolutely still, and the muscles of the limbs and perineum are completely relaxed. He used to give strychnin with the anesthetic, but has replaced it with caffein since last March, and the result has been marvelous, he asserts. Not only are there no by-effects,

but he has witnessed actual resurrections under it, the patient rousing from shock or the toxic action of infections. He makes the injection between the twelfth dorsal and first lumbar vertebrae or between the fourth and fifth lumbar.

Sugar to Ward Off Shock in Arsphenamin Treatment.—Cheinisse reviews some recent reports on the intravenous injection of 25 or 50 per cent. solution of glucose, before or associated with some drug, digitalis, morphin, ether or arsphenamin. Pranter has given arsphenamin in a strong solution of glucose, and Planner has recently reported applying this technic in 100 cases during the last year. The latter mentions that in one case there was a typical neurorecurrence of the syphilis, showing that the association of arsphenamin and hypertonic sugar solution does not guarantee against neurorecurrence. Dubot of Brussels has recently emphasized the efficacy of the sugar in warding off shock and other untoward by-effects with arsphenamin treatment. By combining the drug with a 50 per cent. solution of sugar, he was able to carry through the course of treatment in five patients who previously had been totally unable to tolerate the arsphenamin. The sugar, he says, allows larger doses to be given safely. Since he has made a practice of this, jaundice has become very rare in his syphilis service and eruptions absolutely exceptional.

Nov. 1, 1922, **30**, No. 87

*Nontuberculous Hip Joint Disease. A. Broca.—p. 941.
*Obesity and High Blood Pressure. F. Pedrazzini.—p. 943.

Nontuberculous Hip Joint Disease.—Broca warns against the tuberculin test in hip joint disease, as a positive response does not tell whether the hip joint is the seat of the tuberculous lesion responsible for the reaction, while, on the other hand, the reaction may do harm in the joint. He remarks that very little is known certainly in regard to syphilitic disease of the hip joint. His review of the whole field of nontuberculous arthritis of the hip is mainly for the purpose of stating the problems pressing for solution. There is so much that has to be left uncertain, and the pathologist as he gathers experience grows less and less sure of his classification, and the clinician more modest in affirming the diagnosis.

Obesity and High Blood Pressure.—Pedrazzini explains the anatomic and physiologic conditions regulating the normal elastic play of the spinal dura mater. This is what makes possible the entrance of the blood into the skull already packed full of tissue and fluid. When accumulations of fat prevent this elastic play of the spinal dura, which is in close connection with the circulation in chest and abdomen, there is liable to be serious disturbance. Hence he urges systematic respiratory massage of the abdomen in the obese and in all persons of the apoplectic type. He directs the patient to breathe deep and, during expiration, press on the abdomen, then releasing it and making an effort to distend it during inspiration. The aim is to vary the pressure in the abdominal cavity within as wide a range as possible, striving thus to render more active the venous circulation in the spinal plexuses, etc.

Progres Médical, Paris

Oct. 14, 1922, **37**, No. 41

*Research on Dyshydrosis and Pompholyx. P. Legrain.—p. 477.
The Liver in Acute Infectious Diseases of Children. P. Lereboullet.—p. 479.

Oct. 21, 1922, **37**, No. 42

Diphtheric Paralysis. Lereboullet.—p. 489.
Mussulman Customs Favor the Fight Against Venereal Disease in Morocco. Carle.—p. 493.

Oct. 28, 1922, **37**, No. 43

Mechanism of the Fixation of Complement Test. E. Peyre.—p. 501.
Cancer of the Uterus Cervix. H. P. Achard.—p. 503.

Nov. 4, 1922, **37**, No. 44

Symptoms and Diagnosis of Inherited Syphilis in the New-Born. G. L. Hallez.—p. 513.

Origin of Dyshydrosis or Pompholyx.—Legrain made a minute laboratory research on the mycotic origin of dyshydrosis eruption on the hands and feet of thirty-two patients. True recurring dyshydrosis, or Fox' disease, is of short duration, disappearing as a rule without treatment and is not due to parasites. The pompholyx eruptions are traceable to various causes. One variety is due to general disturbances or intoxications, and the other to micro-organisms. He emphasizes that in all cases of persisting dyshydrosis eruptions, without the characteristics of true or typical dyshydrosis, it is of the utmost importance to look for micro-organisms.

Revue de Chirurgie, Paris

1922, **60**, No. 6

*Repeated Operations on Gastric Cancer. X. Delore and C. Dunet.—p. 359.
*Bone Grafts. R. Simon.—p. 368. Conc'n.

Repeated Operations on Gastric Cancer.—Delore and Dunet describe the features which distinguish the clinical picture by extension of the malignant disease after an operation, from the clinical picture caused by some accidental obstruction which might be obviated or removed by another intervention. This should be restricted to the minimum, and for this reason they advise measures requiring the least manipulations, anterior precolic gastro-enterostomy, suturing with catgut without a button, rinsing out the stomach daily if there is vomiting. This clears out clots and septic products. In one of the four cases described the patient survived for a year in good condition after the second gastro-enterostomy. The stomach had been resected in this case; in the others merely a palliative gastro-enterostomy had been done, and the second gastro-enterostomy was required from six to nine months later. Two are still in fair condition since the second operation, last May or June. The other patient died from hemorrhage from the cancer four days later.

Bone Grafts.—Simon gives nearly twenty pages of bibliographic references which he had consulted for this biologic study of bone grafts. There are thirty-eight illustrations, and his conclusions from his research confirm the general experience that a fresh bone autotransplant, although it is doomed to almost total mortification, still may entail a rapid and complete restoration of the bone. Transplantation of a fresh homoplastic fragment of bone has some chances of success, but a fragment from another species, and a fragment of dead bone generally fail completely. These two last mentioned procedures should never be used except for a temporary support. Special pains are necessary to ward off fracture of the graft as the bone tissue is absorbed.

1922, **60**, No. 7

*The Cleavage Zones of the Peritoneum. P. Descomps.—p. 451.

The Cleavage Zones of the Peritoneum.—Descomps' 102 illustrations and diagrams show the zones in the peritoneum tributary to the different organs and parts of organs, and the cleavage throughout, which leaves intact the circulation and innervation. His pictorial analysis traces the way in which the digestive tube and its annexes bend and twist and overlap, in the course of their growth, to accommodate themselves to the comparatively more and more restricted dimensions of the abdominal cavity. The visceral peritoneum following them overlaps, and sticks together in certain regions; the coalescence being sometimes with the parietal peritoneum and sometimes with itself, the visceral peritoneum. These stuck-together portions of the peritoneum can be pried apart when the zone of cleavage is perfectly understood. These zones of cleavage enable us to understand certain atypical arrangements, to distinguish between curious, but insignificant, anomalies, and relics of pathologic processes. On the other hand, we can recognize the anatomic origin of certain arrangements that we have been ascribing to disease. A knowledge of the embryogeny, morphology and topography of these *zones accolées* of the peritoneum, suggests to the surgeon new ways and means to utilize the resources of this cleavage, particularly in the concluding peritonization, the effort to reconstruct the operative focus. The restoration may be according to the primitive arrangement, or some logical plan designed to meet the new post-operative conditions, conceived and executed from both the anatomic and physiologic standpoints. Of the forty-seven pages of this article, only two are text reading matter.

Revue Médicale de la Suisse Romande, Geneva

October, 1922, **42**, No. 10

*Antianaphylaxis. P. Abrami.—p. 625.
Oscillotonograph Record of Systolic Blood Pressure. M. Brot.—p. 632.
Oscillometry of Blood Pressure. Bonjour.—p. 636.
Revision of Liquor Laws in Switzerland. V. Demole.—p. 652.
Case of Primary Tuberculous Peritonitis. E. Grasset.—p. 658.

Antianaphylaxis.—Abrami has taken a leading part in research in this line, and he describes the phenomena involved in anaphylaxis of respiratory, alimentary and other origin. The sympathetic system is the one mainly involved in the phenomena of experimental anaphylaxis, which suggests that treatment for man should include measures to act on the sympathetic. A special predisposition is also evident in man, and this predisposition should be combated likewise. This predisposition explains the recurrences after an apparently complete cure. Desensitization does not always have to be specific. All kinds of substances have been used for this, and almost any of them are liable to prove successful. More remarkable still, certain cases rebellious to all other measures have been cured by inducing a shock similar to the anaphylactic shock. "Miraculous cures of typhoid have been reported after inoculating the typhoid patient with a little of his own serum. The typhoid bacilli disappeared completely within a few hours. This promising method is unfortunately fraught with certain dangers. It is impossible to gage the violence of the shock." In a case of extensive Quincke's edema, recurring frequently and rebellious to the whole range of treatment, Abrami made a cautious intravenous injection of peptone. An intense shock followed, but the man was cured at once after seven years of the affection. There was a slight recurrence nine months later, but it yielded promptly—and without reaction—to another injection of peptone. Abrami adds that it is too early yet to deduce general laws; all we can do at present is to record scattered facts. Time will show their connection. We know already that thyroid insufficiency may be a factor in the anaphylaxis. One patient with "rose cold" was freed from his sensitization by taking 0.2 gm. of thyroid extract. As long as he kept this up he could sniff roses with impunity, but never otherwise.

Siglo Médico, Madrid

July 29, 1922, **70**, No. 3581

*Glucose in Treatment of Sinusitis. J. M. Barajas y de Vilches.—p. 101.
Diagnosis of Active Tuberculosis. Ramón Villegas.—p. 104.
Case of Parkinsonism After Epidemic Encephalitis. F. Cuesta Urcelay.—p. 105.
Pharmacology of Galenic Preparations from Vegetable Kingdom. M. Alvarez Ude.—p. 106. Conc'n in No. 3587.
Post Mortem Diagnosis. J. de la Guardia.—p. 110.

Treatment of Sinusitis.—Barajas reports disappointing results from intravenous injections of a hypertonic solution of glucose in treatment of suppuration in the accessory sinuses. Wiethe has reported excellent results in chronic cases of sinusitis, but Barajas' experience failed to confirm this.

Aug. 12, 1922, **70**, No. 3583

Cajal. C. M. Cortezo.—p. 149. Cont'n.
*The Acquisitions of Surgery in the War. Forgue.—p. 152. Conc'n No. 3584.
Autogenous Vaccines to Supplement Operations for Cataract. Márquez.—p. 154.

The Surgical Acquisitions from the War.—This is an address delivered by Forgue of Montpellier in the Academia de Medicina at Madrid. He regards the venturing on primary suture after severe injuries as the most important achievement of surgery in the war, and this, he said, was introduced by the French. The improvement in the treatment of fractures amounted almost to a revolution; the Americans and the English were the pioneers here. The principle of intervention as early as possible in wounds of the abdomen and chest established its value beyond question, the war experiences banishing forever the fear of operative pneumothorax. He said that the special feature distinguishing the present era of surgery is the ever closer collaboration between the physician and the surgeon. This is especially important in emergency cases. The physician must not judge surgery by its failures; too often the physician's procrastination is solely responsible for them, or his purge in intestinal disease, his leeches in mastoiditis, or his morphin, which silences the cry of the organs for help. Forgue reiterates that the mental effort of the diagnosis is as difficult and as entitled to gratitude as the manual act of the operation. Surgery has receded in recent years from certain fields: There is less confidence in the Talma operation for ascites, and in laparotomy as treatment for tuberculous peritonitis. Radiotherapy promises to restrict its field still more, but as it retires from some fields it is advancing farther in others.

Aug. 19, 1922, **70**, No. 3584

Roentgen-Ray Treatment of Mammary Cancer. B. Navarro Cánovas.—p. 173.
Vaccine Therapy by the Vein. Barrio de Medina.—p. 175.

Aug. 26, 1922, **70**, No. 3585

*Ophthalmoplegic Migraine Neuralgia. M. Marin Amat.—p. 197. Conc'n No. 3586, p. 224.
Association of Morphin and Magnesium Sulphate. R. Saenz de Santa Maria.—p. 200.
Present Status of Acidosis. M. Labbé.—p. 202.

Recurring Painful Paralysis of the Ocular Muscles.—Marin Amat here reports three new cases of migraine with ophthalmoplegia followed by persisting sensory-motor disturbances in the ocular muscles on that side and atrophy of the optic nerve on the other side. In his first case, published in 1919, the pain returned three times in the course of five years, finally becoming so severe that the woman of 29 became imbecile, and died. In the second case, this ophthalmoplegic migraine of a month's standing seemed to be arrested by protein therapy. The woman of 56 has had no recurrence during the year or two since the course of three parenteral injections of 4 c.c. of milk. She seems now entirely well. The third patient seemed to be doing well under the course of protein therapy; the pain had subsided, but the ophthalmoplegia persisted, and the woman died suddenly five days after the last parenteral injection. The fourth patient was a man of 55, and the intense pain in the left side of the head and brow had first appeared, with the total oculomotor paralysis, a month before. Protein therapy and other measures gave no relief in this case. Marin Amat says that about 100 cases of this recurring painful paralysis of the ocular muscles had been published by 1920. It progresses from a recurring affection to become continuous, with periodical exacerbations. He never found any evidence of syphilis in his four cases, but the patients had all been subjected to privations. Many of the cases on record terminated fatally. Protein therapy seemed to be responsible for the cure in one or two of his cases but displayed no efficacy in the others. The extreme intensity of the pain and the absolute failure of all measures for relief might justify a palliative operation on the nerves involved, or injection of alcohol.

Sept. 2, 1922, **70**, No. 3586

The Mechanical Factor in Chronic Constipation. J. Blanc Fortacin.—p. 221.
Rare Varieties of Abdominal Cysts. Idem.—p. 223.

Sept. 9, 1922, **70**, No. 3587

Case of Diffuse Glomerular Nephritis. A. M. Vallejo de Simón.—p. 243.
Extraction of Cataract in a Case of Ozena. C. Jiménez López and V. Ribón.—p. 249.
*Pharmacology of Active Galenic preparations from the Vegetable Kingdom. M. Alvarez Ude.—p. 250. Begun in No. 3581, p. 106.

Pharmacology of Galenic Preparations from the Vegetable Kingdom.—This long technical article was presented by Alvarez Ude on his election to membership in the Academia Nacional de Medicina, in the section on pharmacy.

Sept. 16, 1922, **70**, No. 3588

*Contracted Pelves. I. Pedriani.—p. 269. Conc'n No. 3593, p. 399.
Education for Life of the Crippled. D. Joaquin Decref.—p. 272. Cont'd.
"History of a Diagnostic Blunder." T. Cobo Martinez.—p. 275.

Contracted Pelvis.—Pedriani relates that only forty-seven of the 105 parturients he has been studying had a diagonal conjugate of 11 cm. He thinks that we fail to appreciate the frequency of abnormally shaped pelves. His experience has confirmed, however, that delivery may be normal even with a quite contracted pelvis. If spontaneous delivery is out of the question, he says, cesarean section is preferable for many reasons, but if conditions render this impracticable, pubiotomy should be considered next.

Deutsche medizinische Wochenschrift, Berlin

Sept. 29, 1922, **48**, No. 39

*Experimental Research on Syphilis. W. Kolle.—p. 1301.
The Technic of Blood Transfusion. H. F. Höst.—p. 1302.
Normomastix Reaction of Cerebrospinal Fluid. V. Kafka.—p. 1305.
Cerebrospinal Fluid in Neurosyphilis as Guide for Treatment. W. Weigeldt.—p. 1305.
"Serodiagnosis of Syphilis." W. Gaehtgens.—p. 1307.
Experiences with Neo-Silver-Arsphenamin. R. Schiller.—p. 1307.
Food as a Stimulant for Purin Metabolism. E. Joel.—p. 1309.
Is Yeast Therapy in Diabetes Well Founded? Lenné.—p. 1310.
Hemolysis by Phenolphthalein. K. Schilinsky.—p. 1311.
Treatment of Abortion. E. Engel.—p. 1311.
"Milking" Manipulations Force Broken Catheter from Urethra. F. Franke.—p. 1312.
Intrascrotal Injection of Sodium Chlorid in Gonorrheal Epididymitis. W. Richter.—p. 1313.
*Protein Therapy in Recent Gonorrhea. Schreiber.—p. 1313.
The Use of Incandescent Vacuum Tubes in Roentgenographic Diagnosis. J. Schütze.—p. 1314.
Pemndorf's Scarification Reaction in Tuberculosis. Eckert.—p. 1315.
Hairy Nevus Covering Nearly Whole Body. Helle.—p. 1316.
Appendicitis and Gonorrhea Most Frequent Causes of Chronic Salpingitis and Ovaritis. A. Mueller.—p. 1316.
Can a Subject Be Hypnotized Against His Will? Levy-Suhl.—p. 1317.
Improvised Manometer for Riva-Rocci-Recklinghausen Tonometer. Goldscheider.—p. 1317.
Bronchial Asthma. Goldscheider.—p. 1317.
The Technic of Otoscopy. H. Haike.—p. 1319.

Experimental Researches on the "Abortive Cure" of Syphilis.—Kolle refers to Ehrlich having recognized soon after the discovery of arsphenamin that its chief field of application lay in the early treatment of syphilis. Carrying out this idea, Kolle has endeavored by experiments on rabbits to decide these questions: (1) Whether, and if so, to what extent, it is possible to cure (that is to sterilize), with the aid of arsphenamin, rabbits infected experimentally with syphilis, and (2) more particularly, up to how long after the infection is such sterilization possible. By extensive researches on syphilitic rabbits, during recent years, he has confirmed the findings of Finger, Landsteiner and Uhlenhuth that rabbits that have been infected with the Frankfort Truffi strain of syphilis and have been given no antisyphilitic treatment, cannot be infected again with syphilis, appearing under a typical primary lesion, provided the second inoculation occurs after the lapse of ninety days after the first infection. In connection with several hundred reinfections of syphilitic animals, he secured in only a very few cases infiltrations or ulcerations, together with spirochete findings, but never typical primary lesions. In the period extending up to sixty days after the first infection, reinfections occur in 60 per cent. up to fifty days; occasionally between sixty and ninety days, but typical chancre never occurs after ninety days. A rabbit infected with syphilis reacts, then, in the same manner as a human being whose syphilis is not cured—in whom the sirochetes have not been radically eliminated. Never again throughout his whole life does he present a syphilitic reinfection with a typical primary lesion. However, if the equilibrium of immunity is disturbed, syphilitics may nevertheless become reinfected, as it were, by the spirochetes still remaining in their organism, as is proved by aortitis, gummata, paralysis, etc., which develop without reinfection. Kolle claims to have shown by his animal experiments in just what percentage of cases a sterilization of persons infected with syphilis can be effected with arsphenamin, and up to how long after the primary infection such sterilization can be attained without fail. Kolle's recent experiments show that up to forty-five days after the infection the sterilization of rabbits was possible in a large percentage of cases, although, in general, only three injections of large doses of arsphenamin (two thirds of the tolerated dose) were given. However, after the forty-fifth day, the conditions change, and it is rarely possible to sterilize a rabbit with arsphenamin. Attempted reinfection proves unsuccessful, for no primary lesions develop. After ninety days from the primary infection, he was never able to produce *de novo* primary lesions in rabbits. Kolle is now conducting a series of researches to discover whether or not it is possible by long continued treatment, for a year or more; that is, by intermittent serial treatments, either with or without mercury, to sterilize animals, infected with syphilis, after the lapse of more than forty-five days from the primary infection.

Protein Therapy in Recent Gonorrhea.—The symptoms of acute gonococcus infection of the urethra did not develop till fifteen days after the contamination. An intercurrent tonsillitis with abscess in the tonsil and high fever may have been influential in thus delaying the onset of the gonorrhea. This assumption is sustained by the prompt curative action of intragluteal injection of 10 c.c. of milk. The protein shock thus induced seemed to cure the gonorrhea once and for all.

Deutsche Zeitschrift für Chirurgie, Leipzig

September, 1922, **174**, No. 1-4

*Web Fingers. H. Römer.—p. 1.
*Operative Treatment of Sciatica. Heile.—p. 10.
*Syphilitic Disease of the Stomach. T. Aoyama.—p. 34.
*Complications of Gastro-Enterostomy. E. A. Delfino.—p. 69.
*Compensatory Splenoid Structures After Splenectomy. H. Eggers.—p. 81.
*Epithelial New Growths in Kidney Pelvis. M. Grauhan.—p. 152.
Significance of Nodules in Thyroid. H. Hueck.—p. 185.
Friedmann Treatment of Surgical Tuberculosis in Children. G. Frommolt.—p. 218.
*Fracture of Humerus. E. Sattler.—p. 268.
*Conservative Treatment of Pseudarthrosis. H. Meyer.—p. 278.
Factitious Abscess from Metallic Mercury. Serdjukoff.—p. 281.

Unilateral Symbrachydactylia.—The left hand alone was affected, and only in one of the ten children.

Operative Treatment of Sciatica.—Heile has found in cases of rebellious sciatica that the pains are sometimes due to local pressure on the nerve which can be corrected. This pressure may be from an abnormal network of veins on the trunk of the sciatic nerve, as in a case illustrated, or from intraneural adhesion of fibers, or to some anomaly of the nerve itself, as in one case in which the pyriform muscle passed directly through it, the nerve fibers forking around the muscle. The epineurium may be sclerotic or there may be ascending neuritis. Severe anatomic changes may be found even with the symptoms of pure neuralgia. In some cases, relieving the nerve from external pressure as it passed through the sciatic foramen, cured the sciatica. In others, an intraneural injection mechanically separated adherent fibers or adhesion of the epineurium, and started the resorption of relics of inflammation. Merely slitting the nerve sheath may release the nerve from pressure. With actual pathologic conditions in the nerve root, resection of posterior roots may be what is needed. In a case of pathologic conditions in the calf accompanied by symptoms of typical sciatica, mere resection of the gastrocnemius cured the pain. He warns that while acute and chronic affections of the epineurium are responsible for the sciatica in many cases, the epineurium must not be removed. It can be delicately lifted up with fine pincers and adhesions broken up between it and the single nerve cables or between the epineurium and the perineurium, but the anastomoses between nerve cables must not be molested. The intraneural injections were made with 30 to 50 c.c. of a 0.5 per cent. solution of procain, followed by injection of 100 to 200 c.c. of saline, distending the nerve trunk to the utmost, thus prying the cables apart, and detaching the epineurium if it is adherent. Sciatica very rarely follows a gunshot wound of the sciatic nerve, and he ascribes this to the gap made in the nerve by the projectile. This allows secretions to drain away, instead of backing up and pressing on the nerve.

Syphilitic Disease of the Stomach.—Aoyama describes four operative cases with illustrations of the resected stomachs. There was no characteristic clinical picture, and even when the abdomen was opened, there were no pathognomonic findings except possibly the edematous aspect of the whitish thickened serous membrane in connection with the signs of inflammation. The ulcers did not extend into the submucosa. There was a history of syphilis in the two men but not in the two women, and in none were any other manifestations of syphilis to be discovered beyond the positive Wassermann reaction. A colored plate shows the photomicrograms, and the literature on syphilitic disease of the stomach is reviewed.

Complications of Posterior Gastro-Enterostomy.—In the two cases described, the walls of the stomach were unusually thin and flabby while the mesocolon was short and thick.

The resulting traction from the posterior gastro-enterostomy paralyzed the stomach, and there was invagination into the stomach. With this combination, anterior gastro-enterostomy is safer.

After Splenectomy.—Eggers reports in detail the results of experimental research on transplantation of spleen tissue, and the new-formed structure which resembles spleen tissue and is sometimes found in the peritoneum after splenectomy. He accepts the possibility of this being a compensatory formation, to take the place of the missing spleen. The erythrocytes displayed greater resisting powers after the splenectomy, but they were less resistant in the animals after transplantation of spleen tissue, and were least resistant to hypotonic saline in the dog in which one of these spleenlike new growths was found.

Epithelial Growths in Kidney Pelvis.—Grauhan comments on the lesser tendency to metastasis by the blood or lymph vessels of epithelial growths in the kidney pelvis, in comparison to those elsewhere. The great danger is from the ureter stump, when the tumor had been removed before it had broken through the kidney capsule. The ureter therefore should be excised down to its mouth in the bladder, regardless of whether the tumor is a papilloma or epithelioma. The bladder should be inspected often afterward to detect and cauterize any appearance of tumor tissue.

Extension Treatment of Fracture of Humerus.—Sattler refers to fracture just above the condyle, and gives an illustration of his arrangement for applying weight extension in four different directions. The patient reclines, the arm at a right angle to the trunk, the elbow bent at a right angle. Traction is applied to the forearm in three directions, the band in the bend of the elbow at a right angle to the up and down traction bands. Counter traction is with a band under the axilla, slanting to the other shoulder and beyond.

Conservative Treatment of Pseudarthrosis.—Meyer applies a plaster cast to trunk and arm, in case of pseudarthrosis of the upper arm. A wide gap encircling the upper arm is left in the plaster, and this is bridged and drawn up with three screw clamps. These are adjusted afresh each day. The stimulus to bone regeneration from the pressure thus applied renders a plastic operation unnecessary, and healing is soon complete.

Medizinische Klinik, Berlin

Sept. 3, 1922, **18**, No. 36

Physiology of Secretion of Pancreatic Juice. F. Reach.—p. 1137.
*The Blood Count in General Practice. H. W. Wollenberg.—p. 1139.
*Treatment of Pernicious Anemia. P. Haggeney.—p. 1141.
Unusual Manifestations of Epidemic Encephalitis. E. Adler.—p. 1142. Conc'n No. 37, p. 1179.
*Tetany After Unilateral Goiter Operation. F. Sacki.—p. 1145.
*Cerebrospinal Fluid After Inflation of Air. G. Herrmann.—p. 1146.
*Vacuum Glass Treatment of Cervicitis. G. Loewenstein and B. Schapiro. —p. 1147.
Compression of Iliac Vein by Cecum. S. Lieben.—p. 1148.
*Tobacco and Neurasthenia. K. Keller.—p. 1149.
Roentgenography in Anacidity. E. Egan.—p. 1152.
Durability of Desiccated Vaccines. F. v. Gutfeld.—p. 1153.
*Research on Typhus. H. Sparrow.—p. 1155.
Consent to Marriage After Gonorrhea. E. Portner.—p. 1155.
Recent Literature on Endocrine Glands. F. Schlesinger.—p. 1156.

Importance of the Differential Blood Count in General Practice.—Wollenberg urges the necessity for including the differential blood count in the practitioner's routine examinations. He relates a number of instances when this alone gave the clue to the clinical picture. It is particularly instructive when it is a question whether the disturbances are functional or organic, and to substantiate or refute the patient's complaints. He tabulates ten cases of functional disturbances of different kinds; in all, the nucleated neutrophils numbered only from 1 to 3.5 per cent. while the lymphocytes ranged from 22 to 41. In a corresponding group of 10 with ulcer or cancer, the nucleated neutrophils ranged from 5 to 8 and the lymphocytes from 18 to 33.5. Pronounced eosinophilia may suggest helminthiasis in puzzling cases, and polychromasia may warn of chronic minute bleeding from hemorrhoids which was not heeded before as the explanation of weakness and anemia. In pulmonary tuberculosis, the nucleated neutrophils keep at the characteristic figure of 6 or 8 per cent. Arneth's statement that any shifting to the left, as recorded in his table—that is, the appearance of larger proportions of younger forms of neutrophils—is pathologic, has been amply confirmed in practice.

Roentgen-Ray Treatment of Pernicious Anemia.—Haggeney reports two cases of typical pernicious anemia in a woman of 48 and a man of 62 in which a remarkable turn for the better followed a few days after a single exposure of the spleen to a stimulating dose of roentgen rays, ¼ H. E. D. = 60 F., with 3 mm. aluminum filter. The hemoglobin increased in a week from 27 to 30 per cent. the erythrocytes from 2,500,000 to 2,950,000 in the man, the color index from 0.5 to 0.9. In the woman the erythrocytes increased from 1,600,000 to 2,800,000 and the hemoglobin from 22 to 45 per cent. There was a relapse in this case five months later.

Tetany After Unilateral Thyroidectomy.—Sacki reports that a large robust man developed tetany twelve years after removal of the right half of the enlarged thyroid. He has been under great emotional strain and worry of late, and tests showed gastric achylia. The severe paroxysms returned three times in all during the five weeks' course of treatment with calcium. This seemed to overcome the tendency to tetany. The man is a photographer. No other morbid antecedents are known.

The Cerebrospinal Fluid After Encephalography.—Herrmann reports that in two cases of general paresis the number of cells in the fluid, drawn before Dandy's intraspinal inflation with air, averaged 14 but fourteen hours afterward the number was 2,231; four days later it was 167, and two weeks later 19. After a second inflation nearly three weeks later the number ran up to 754. In a case of dementia praecox the cells numbered 2 before and 11,400 thirty hours afterward, almost all polymorphonuclear leukocytes, and the albumin content of the fluid was high. There were also symptoms suggesting meningitis, headache, vomiting and slight Kernig sign. The meninges in the general paresis cases seemed to bear the inflation better. He suggests therapeutic utilization of the Dandy method. It might be possible to exert a favorable influence in this way on tuberculous meningitis, like the action of a laparotomy on tuberculous peritonitis. Or a healing gas or a narcotic might be thus insufflated. He adds that he is contemplating cautious trials of such procedures.

Vacuum Glass Treatment of Gonorrhea in the Female.—The suction glass was applied over the vaginal portion of the cervix to induce passive hyperemia, and this was supplemented with vaccine therapy in treatment of gonococcus cervicitis. It apparently answered the purpose, but the microscope showed the gonococci persisting still numerous. Although a failure so far as the infection was concerned, the mechanical cleansing and renovating effect was ideal.

Effect on Neurasthenics of Smoking.—Keller has been studying in the last fifteen years a number of neurasthenic subjects who repeatedly break off smoking for a time and then resume it again, the effect of the long period of suspension throwing light on the nature of disturbances for which the tobacco is responsible. He refers in particular to the sudden sharp pain in the interior of the skull, like that from horseradish fumes. This is one of the earliest symptoms in young neurasthenics, and it generally puts an end to the smoking habit. The headache from the remote action of the tobacco appears only after smoking has been given up, and it may persist up to two months. Dizziness may be another remote symptom from the action of the tobacco on the neurasthenic; scarcely appearing during the smoking period, it develops first when tobacco has been given up. Young neurasthenic smokers may have peculiar attacks of pain in the heart or stomach region, like a muscular cramp. The attacks may be brought on by the slightest noise, even the buzzing of flies. The attacks may return several times a day, but stop at once or at most in a few days when tobacco is dropped. The attacks may be worse at night; the striking of a clock may bring one on, the subject waking in fright and finding it difficult to go to sleep again. It is evidently a reflex phenomenon. The sounds thus rousing from sleep seem to be magnified, the striking of the clock sounding like an explosion. The prompt subsidence of the attacks when smoking is discontinued, testifies to the cause. The nicotin

affects the peculiarly predisposed neurasthenic brain stem, irritating it, but not enough to exhaust and paralyze it.

Research on Typhus.—Sparrow found that guinea-pigs developed actual typhus when inoculated with human virus. The virus at the twenty-second passage through guinea-pigs proved pathogenic for man. She inoculated herself with it, a year after the first guinea-pig had received it, and she developed the disease in a mild form the tenth day. Two monkeys, however, inoculated at the seventeenth passage through the guinea-pigs, failed to develop typhus. The monkeys seemed to have been immunized by the inoculation, bearing without harm, afterward, inoculation of human typhus virus.

Sept. 10, 1922, **18**, No. 37

The Family Physician and Tuberculosis. W. Neumann.—p. 1169.
Growth of Bones in Health and in Rickets. H. Maass.—p. 1171.
Aberrant Pancreas Cells. F. Kazda.—p. 1174.
Pathogenesis of Catarrhal Jaundice. A. Lippmann.—p. 1176.
*Epidemic Encephalitis. E. Adler.—p. 1179. Begun No. 36, p. 1142.
*Epinephrin Mydriasis in Diagnosis. E. Baráth.—p. 1182.
*White Asphyxia of the New-Born. E. Lauer.—p. 1183.
Treatment of Congenital Hydrocele Testis. S. Lieben.—p. 1184.
*Malaria in Children. J. Falk.—p. 1184.
Paralysis of the Diaphragm. W. Sieben.—p. 1185.
Bacteriology at Influenza Necropsies. K. Klein.—p. 1186.
Urethritis. F. Portner.—p. 1187.
Physiotherapy. A. Laqueur.—p. 1188.

Epidemic Encephalitis.—Adler reviews his experiences with 77 cases at Prague, omitting those seen only at the dispensary. Only 12.9 per cent. seem to have recovered more or less completely. Two men and 5 women died in the acute stage, and one man and 5 women in the chronic phase. The mortality was 16.9 per cent. while 70.2 per cent. seem to be more or less permanently disabled. Only 7.9 per cent. of these are capable of any self-support. Fully 65 per cent. developed the parkinsonian set of symptoms. He was impressed with the aggravating influence of emotional stress, especially in children. In only 2 cases were there notable sensory symptoms; one complained of frontal headache and the other of lancinating pains for a time. Two young people presented peculiar ticlike disturbances, which throws light on the nature of tics. The terrible sleeplessness during the chronic phase often led to actual delirium in the night; nothing but scopolamin gave any relief, and this only by injection. By the mouth it was futile. Protein therapy was followed more often by an aggravation than by improvement. One case in a man of 55 began with a month of severe general symptoms with delirium, followed by severe tetany; then came a week of the characteristic lethargy, extremely profound, which cleared up the diagnosis; there had been no suspicion of it before. Notwithstanding this severe clinical picture, complete recovery followed.

Epinephrin Test in Internal Disease.—Baráth instilled an epinephrin preparation in the conjunctival sac in 210 cases and obtained the positive mydriasis response in all cases of pathologic conditions in the vicinity of the cervical sympathetic. It may thus prove instructive with lung and bronchial gland processes, tumors, aneurysm of the aorta, and deep tumors and abscesses in the neck, spinal meningitis, etc. The response was positive in twelve of eighteen cases of pleuritic adhesions.

White Asphyxia of the New-Born.—Lauer declares that even in the most hopeless cases it is usually possible to resuscitate the child by the methods he describes. The child is covered with warm cloths to the neck, as it lies on a table, the air passages are cleared out and the back of the neck supported by a rolled up towel. The physician seated at the left side of the child holds its head firm with his right hand on the median line while the left hand is placed on its chest. He then blows air into the child's mouth at each regular expiration, taking the child's mouth in his mouth each time. At each interval he presses the air out of the child's chest. In a few minutes the pulse grows better, and by keeping up the rhythmic insufflation the skin in the sternal region grows pink and the child begins to gasp. As the skin elsewhere grows pink, the palms and soles should be gently brushed by an assistant, and cold water sprinkled on the skin. Muscle tonus and reflexes appear and a shallow breathing is evident between the gasps. With cautious insufflation the surplus air escapes through the nose, so there is no danger of emphysema. Only at the very first insufflations should the nose be held to insure the air getting into the lungs. He has applied this treatment with success in three absolutely hopeless cases.

Malaria in Children.—In Falk's case tonsillitis roused unsuspected latent malaria, the two inducing a most puzzling clinical picture.

Münchener medizinische Wochenschrift, Munich

Sept. 29, 1922, **69**, No. 39

Pathogenesis and Prognosis of Epilepsy. Binswanger.—p. 1395. Cont'd.
An Apparatus to Register Movements of a Person Sleeping. W. Gerber.—p. 1399.
Estimation of Total Blood Volume in Cryptogenic Pernicious Anemia. V. Stark and A. Sonnenfeld.—p. 1401.
Ferment Action by Nonferments. W. Biedermann.—p. 1402.
Yeast Extract and Meat Extract. J. W. Schonger.—p. 1405.
Clinical Aspects of Xerostomia. K. F. Schmidhuber.—p. 1406.
*Early Diagnosis of Intussusception. L. Zschau.—p. 1408.
*Treatment of Pleural Empyema. A. Henrichsen.—p. 1409.
Bismuth in Treatment of Syphilis. Felke.—p. 1411.
Chronic Pseudomembranous Bronchitis in Pregnant Woman. H. Wörner. —p. 1412.
Aneurysm of Abdominal Aorta with Symptoms of Ileus. A. Menter. —p. 1412.
Rectal, Anal or Perineal Cramp. K. Elsner.—p. 1413.
Differential Diagnosis of Incipient Tuberculous Spondylitis and Chronic Rheumatism of the Back Muscles. C. Mau.—p. 1413.
Suit Brought by Specialist to Secure Payment of Bill for Medical Services. IV. A. Döderlein.—p. 1414.
Early Diagnosis of Tuberculosis of Joints. A. Krecke.—p. 1415.

Early Diagnosis of Intussusception.—Zschau has found that intussusception, as affecting chiefly children and, more particularly, infants, is still insufficiently understood and appreciated by some general practitioners. In the Cnopf Children's Hospital in Nürnberg there were nineteen cases in the period between 1906-1921, which was less then one tenth of 1 per cent. of the total number admitted. Strong, healthy children, many of them breast-fed, were suddenly seized with vomiting and severe paroxysmal abdominal pains. After a time diarrhea sets in and the stools become bloody. The child grows continually worse and the facies abdominalis becomes marked. The attacks of colic are especially significant. A child that has been lying quiet will suddenly cry out and writhe with pain. The abdomen becomes flatulent and the intestine becomes hard. Finally, a roller-like, only slightly movable swelling, usually above the umbilicus and extending in an oblique direction, can be felt. The temperature is only slightly elevated; the pulse is small and accelerated. Conservative treatment can be tried but usually avails little. In only one of the 19 cases was disinvagination brought about without laparotomy. In 12 of the cases the invagination was ileocolic; in 4 in the colon and in 2 in the ileum. In 2 cases resection of the intestine was necessary. The earlier the operation, the easier it was. Recovery took place in all but one case when the operation was performed within ninety-six hours. The mortality was about 30 per cent. The most frequent false diagnosis was dysentery or hemorrhagic enteritis. The false diagnoses were confined mainly to infants; hence the 4 deaths in 11 cases. Zschau is convinced that in infants the invagination often fails to be recognized, intestinal catarrh being then given as the cause of death. In older children the diagnosis is more accurate, doubtless because they can state where the pain is.

Treatment of Pleural Empyema with Differential Pressure.—Henrichsen regards differential pressure in the treatment of pleural empyema as a physiologic procedure that fulfils all the requirements for an ideal cure. With the reexpansion of the lung, it effects the functional restoration of the diseased side of the thorax and relieves us of the necessity of radical and dangerous plastic secondary operations. Under this treatment he found that very large recent empyema cavities, which contained several liters of pus, became completely closed, usually, in from two to three weeks. The gas he injects is pure oxygen, which is conducted into the respiratory passages through an air-tight mask applied to the mouth and nose. In this manner the intrabronchial overpressure can be regulated whereby, at the moment the pleural cavity is opened, the lung is expanded, and by this overpressure is kept inflated and pneumothorax prevented.

Wiener Archiv für innere Medizin, Vienna

Oct. 15, 1922, **5**, No. 1

*Mussy's Point with Abdominal Disease. F. Högler and K. Klenkhart.—p. 1.
*Periodic Partial Heart Block. R. Maron and H. Winterberg.—p. 7.
*Avian Tuberculosis in Man. K. Lederer.—p. 23.
*Oidium in Gastric Ulcer. P. S. Frank.—p. 39.
*Intermittent Treatment of Malaria. K. Glaessner.—p. 43.
*Duodenal Ulcer. H. Finsterer.—p. 51.
The Dynamics of the Pulse. E. Münzer.—p. 107.
*The Senile Kidney. W. Nyiri.—p. 147.
*Kidney Functioning in Anemia. H. Essen and O. Porges.—p. 195.
*The Cheyne-Stokes Cycle. S. Wassermann.—p. 221.
*Cheyne-Stokes Respiration. L. Hess and W. Rosenbaum.—p. 263.

Mussy's Point with Abdominal Disease.—Högler and Klenkhart discuss the discovery of de Mussy's point in connection with disease of the abdominal viscera. This exceedingly painful point is on the line of the left border of the sternum, at the level of the end of the tenth rib. It has been regarded as pathognomonic for diaphragmatic pleurisy, but their tests on more than 200 subjects have demonstrated that this sign of irritation of the phrenic nerve may be encountered with disease in the right abdominal viscera. When the Mussy point on the right side is pronounced, especially when the pleura and lung findings are negative, an inflammatory process in the gallbladder region should be suggested. In their 35 gallstone cases, the Mussy point was extremely painful in 32 and there was no further tenderness after cholecystectomy. In 50 cases of gastric ulcer, 10 of cancer and 58 of other gastrointestinal affections, appendicitis, etc., the Mussy sign was constantly negative, except in one instance in which the gallbladder was probably involved secondarily. In 5 gallstone cases, this tenderness of the phrenic nerve at this point was the only symptom during the intervals of the colics. In 3 cases of obstructing gallstones there was no Mussy point, and the operation confirmed the absence of an inflammatory process.

Variations in Partial Heart Block.—Maron and Winterberg report a case of mitral insufficiency and stenosis with variations in the time of transmission of the impulse, a periodic form of skipped ventricle systole, but fluctuating at different times. They discuss the explanation.

Avian Tuberculosis in Man.—The diagnosis had been polycythemia during life, but necropsy revealed an atypical tuberculosis in the lungs of the woman of 49. The first symptoms—fever, and pain in the spleen—had been noted ten weeks before death, and tubercle bacilli of the avian type were found in various organs and were responsible for the almost acute affection. The bacterial toxins evidently caused a polycythemia at first, with final exhaustion and fibrous transformation of the bone marrow.

The Oidium in Relation to Gastric Ulcer.—Frank's research sustains the common presence of the thrush fungus in ulcerating stomachs, but fails to connect it with the ulcer in any way.

Intermittent Quinin Treatment of Malaria.—Glaessner reports exceptionally good results in seventy-seven cases of malaria in which he gave quinin by the Ochsner method: small doses at two hour intervals for two days, then suspension for eight days, and then resumption of the 0.15 gm. every two hours for two days. The quinin was preceded each time by a castor oil purge, and only a light diet allowed during the two days. In the intervals no dietetic restrictions were imposed.

Duodenal Ulcer.—Finsterer analyzes his 225 operative cases in recent years, with 39 cases of cicatricial stenosis of the pylorus. Resection of the duodenum resulted in a complete cure in 94 per cent. of the 118 cases, and the others have no serious disturbances. His total mortality was 4.2 per cent. but in recent years it has not been over 1.4 per cent.

The Senile Kidney.—Nyiri summarizes the clinical or necropsy findings or both in fifty-six cases of senile kidney. The kidney functioning was approximately normal in 33 per cent., and even in the others none of the symptoms were pathognomonic.

The Kidney Functioning in Anemia.—The tabulated findings in 12 cases of pernicious or secondary anemia show severe renal disturbance when the hemoglobin is down to 30 per cent. or below. Both the power of concentrating and diluting the urine seem to be impaired. With oxygen deficit, the kidneys work with the minimum of effort. The hydremia and edema with pernicious anemia is thus analogous to the similar phenomena with chronic nephritis.

The Cheyne-Stokes Set of Symptoms.—Wassermann studies this subject from the standpoints of the symptoms, pathologic physiology, its place in the ranks of cardiovascular disease, and its treatment. There seem to be two sets of alternating visceral phenomena, as also two sets of sensory and consciousness phenomena, an active set and a passive set. All are the result of asphyxia of the respiratory center, the adjoining bulbar centers and of the whole central nervous system. The one effectual treatment is with an ample supply of oxygen. Hess and Rosenbaum assert that the Cheyne-Stokes respiration has a deeper significance than has been hitherto credited to it. It represents an upset of the connection between the cortex and the lower segments of the brain. The resulting insufficiency of the cortex causes pathologic forms of breathing, of blood pressure, and of muscle movements. This assumption links the Cheyne-Stokes respiration and various forms of tremor with the Mayer and Traube-Hering waves of blood pressure.

Sei-I-Kwai Medical Journal, Tokyo, Japan

October, 1922, **41**, No. 5

Action of Diphtheria Toxin on Labyrinth. T. Sato.—p. 1.
*Human and Bovine Tubercle Bacilli. S. Otabe.—p. 13.

Study of Human and Bovine Tubercle Bacilli.—Otabe found a great difference between human and bovine tubercle bacilli. Tubercle bacillus from a child, as a whole, belongs to the human tubercle bacillus, and swine tubercle bacillus seems to belong to bovine tubercle bacillus. Human tubercle bacillus may be altered, to some degree, by passing through the bodies of children for many years, and may take some type of growth like bovine tubercle bacillus on culture mediums. Milk infection may not be as dangerous as house infection from the point of bovine tuberculosis. Human and bovine tubercle bacilli may be different from each other as bovine and avian tubercle bacilli are. The latter bacillus does not infect pigs and other animals under natural conditions, as would be the case with the bovine tubercle bacillus in the human subject. His experimental results strengthen Otabe's belief that the bovine tubercle bacillus, under natural conditions, does not infect the human subject, and that the human tubercle bacillus does not infect cattle.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Sept. 16, 1922, **2**, No. 12

*Waking Dreams. G. Jelgersma.—p. 1250.
*Urea in Blood. J. J. H. Meuwissen and R. L. J. van Ruyven.—p. 1264.
*Paroxysmal Tachycardia. J. Lankhout.—p. 1268
*Amount of Blood to Transfuse. T. Halbertsma.—p. 1272.
Case of Accidental Vaccinia. J. Broers.—p. 1276.

Waking Dreams.—Jelgersma applies this term to dreams in which the action of the dream centers around some actual sound or sensation perceived by the dreamer. He appealed through the *Tijdschrift* for examples of such dreaming, and has thus collected 120 authentic instances. Analysis of the actual happening, in connection with the dream, as well as analysis of dreams in general seem to show that a dream can occur and run its course all in a moment. It is a short-circuiting, as he explains, and he queries whether in waking hours we may not sometimes experience in the same way a massing of ideas and remembrances in a brief moment, as when persons think they are drowning. This seems to be the counterpart of the dream. It is an incredibly brief short-circuiting between the conscious and the subconscious.

Microtest for Urea in Blood.—This communication from the Utrecht university laboratory reports success with the Folin and Wu method. Even with as little as 0.4 c.c. of blood, the urea content could be determined with satisfactory accuracy. The Bahlmann method also proved reliable, using 0.2 c.c. of blood. Urea was added to blood and recovered by both these methods with surprising accuracy. The urease technic is a great improvement.

The Prognosis with Paroxysmal Tachycardia.—The retrospective diagnosis in the case described is that emotional stress from an accident had exaggerated an old tendency to brief and mild paroxysmal tachycardia, with an organically sound heart. The young woman was reassured that the periods of tachycardia would probably grow briefer and less pronounced in time, which has proved to be the case.

Amount of Blood Needed and Used in Transfusion.—Halbertsma tabulates the findings in twenty children treated with transfusion of blood. They demonstrated, he asserts, that in order to increase the erythrocytes by 1 million per cubic mm. we must introduce 15 c.c. of blood per kilogram of body weight. He thinks we can safely take this rule for our guide in the amount of blood needed and which we can safely infuse.

Acta Chirurgica Scandinavica, Stockholm

Oct. 11, 1922, **55**, No. 3

*Substitute for Thumb. S. Orell.—p. 223.
*Intracranial Pressure with Fat Embolism. S. Lundberg.—p. 237.
*Acute Tendovaginitis. G. Vidfelt.—p. 242.
*Gastric and Duodenal Ulcers. E. Perman.—p. 286.

Substitute for Thumb.—Orell's study of normal and dissected thumbs has shown the principles for reconstruction of the thumb. His illustrations confirm his success in a case in which he made a hard rubber artificial terminal phalanx for the thumb. This was fitted on the stump of the thumb and held in place and controlled with stout wire passing through the front edge of the prosthesis and around the wrist, under a leather strap. The rubber thumb is colored to match the leather.

Fat Embolism.—The robust man of 35, after a comminuted fracture of the leg and long ride to the hospital, became unconscious the next day. He died on the fourth day, with typical symptoms and findings of fat embolism in the brain. The cerebrospinal fluid showed high pressure, up to 400 mm. water on three occasions. The hyperemia, edema and bleeding, consequences of the fat embolism, amply explain this high pressure, and the possible benefit from repeated lumbar puncture. It is a question whether improving the circulation will benefit by allowing the fat emboli to be swept along, or do harm by sweeping more emboli to the brain. We are justified in making the attempt, however, in these otherwise doomed cases, relieving high intracranial pressure by lumbar drainage.

Acute Tendovaginitis.—Vidfelt's long article (in English) presents his experience with the Carrel treatment applied in 55 cases of acute tendovaginitis. The tendon was completely restored to normal in 31 and there was partial necrosis in 3 and total in 9 of the 43 treated with rubber drains and sheet rubber alone, no gauze. In the 13 cases in which there was complicating bursitis, the outcome was excellent in 9; the outcome is not known in one case and in 2, function is poor. One in this group died from sepsis. In 12 other cases, the tendovaginitis was treated conservatively and normal function was restored. Two Cramer bands were often used for the elastic tension applied to avert contracture. When the operative wound is quite healed, the mass of the scar is still soft and yielding, and under constant medical supervision the function of the finger can be regained. In the outpatient department this can be entrusted only to the most energetic patients. It is better to take them into the hospital for this mechanical treatment. If it is neglected or done ineffectually, contracture will flex the finger, and this, once settled, cannot afterward be satisfactorily corrected. In 9 cases he performed a secondary plastic operation; after excision of scar tissue the finger could be flexed better.

Healing Processes in Gastric and Duodenal Ulcers.—Perman discusses the histology and course of healing, with three colored plates. In 8 of the total 36 cases the gastric or duodenal ulcer had perforated. All the ulcers could be classed in two groups, those with and those without granulation. In those gastric ulcers with a granulation layer, healing seemed to be proceeding in an entirely normal manner, and this allowed a relatively favorable view of the ability of such ulcers to heal. High hydrochloric acid was found with the Ewald test breakfast in the majority of the cases with well defined granulation in the bottom of the ulcer. In one case, the entire bottom of the ulcer was covered with vigorous granulations, and yet the free and total acidity was not less than 70 and 94. Hyperchlorhydria is thus not an obstacle to the development of young cells in the ulcer. In 3 of his cases there seemed to be a recent ulcer on an old, more or less healed ulcer, and these patients had had periods of symptoms from the stomach, recurring at irregular intervals. The ulcer may heal during these intervals or merely lie latent. No healing zone was found in 3 of the 5 duodenal ulcers, and only a few traces in the others. Otherwise the four layers of tissues encircling the ulcer presented the same picture as with gastric ulcer: the exudation layer, the necrosis layer or the granulation layer, and the cicatricial zone. No granulation zone was found in the perforated cases. In 2, the recent ulcer seemed to have developed at the site of an old ulcer. The perforated ulcers seemed to be usually a new and acutely developing ulceration or a relatively sudden flaring up of an old one. A table gives the findings in the gastric ulcer cases compared with the clinical course. The granulation layer was found in 13 and in all but one in this group there had been periodical symptoms for from seven to forty years in 6, and for six months to several years in the others.

Hospitalstidende, Copenhagen

Oct. 4, 1922, **65**, No. 40

*Protein Therapy Cures Purpura. H. C. Gram.—p. 649.

Protein Therapy Cures Werlhof's Disease.—Gram has only one case to report, but the complete cure, with the transformation of the blood from the hemorrhagic purpura type to practically normal, and subsidence of all subjective and objective symptoms, was undoubtedly, he asserts, the direct consequence of the repeated parenteral injections of milk. The patient was a woman of 59, and the first outbreak of petechiae had been four months before the protein therapy was applied. Fever, hematemesis and hematuria soon followed, with neuralgic pains. A small cut in the ear bled for an hour. An intragluteal injection of 8 c.c. of milk was followed two weeks later with 2 c.c. of milk and two more injections of 4 c.c. each in the following month. The temperature returned permanently to normal three days after the first protein injection, and the bleeding time dropped from over an hour to normal after the second injection. By this date the coagulation time had also become normal, from the over fifteen minutes at first. The blood platelets increased regularly from 4,000 to 234,000. The differential blood count and other findings are tabulated, all testifying to the parallel improvement in all lines. A colon bacillus affection of the urinary passages was treated with a colon bacillus vaccine, during the course of the protein therapy. This infection may have been the primary cause of the thrombopenia, as a constant source of generation of toxins.

Oct. 11, 1922, **65**, No. 41

*The Festival of the Copenhagen Medical Society. **V.** Scheel.—p. 666.

The Copenhagen Medical Society's Celebration.—Scheel reviewed the history of the society since its foundation 150 years ago. The congratulations received from far and near coming from scientific societies and individuals, are reproduced also, and the list of honorary members elected, the cantata written for the occasion, and Rovsing's address at the reception in the city hall. The celebration was described in the News department, Nov. 25, page 1858.

Ugeskrift for Læger, Copenhagen

Oct. 5, 1922, **84**, No. 40

*Roentgen-Ray Treatment of Mammary Cancer. S. Nordentoft.—p. 1300.

Roentgen-Ray Treatment of Mammary Cancer.—The forty-two cases treated in 1915-1919 by the late Dr. Nordentoft are tabulated, with full details for comparison, and three cases are illustrated. The interval since has been over six to eight years in five operable cases treated with the rays alone or plus a partial operation. The interval has been three and four years in two other in this group, and has been from two and a half to three and a half years in two others treated for recurrence after a radical operation.